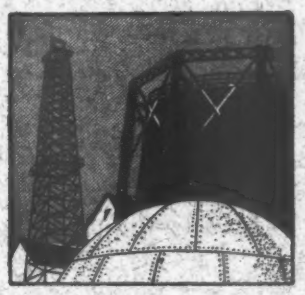
AMERICAN GAS ASSOCIATION MONTHLY



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CLIFFORD E. PAIGE

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SAMUEL INSULL

A. G. A. Research on Forge Heating at U. of M.
W. E. JOMINY

November, 1930

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Beginning November 15, 1930

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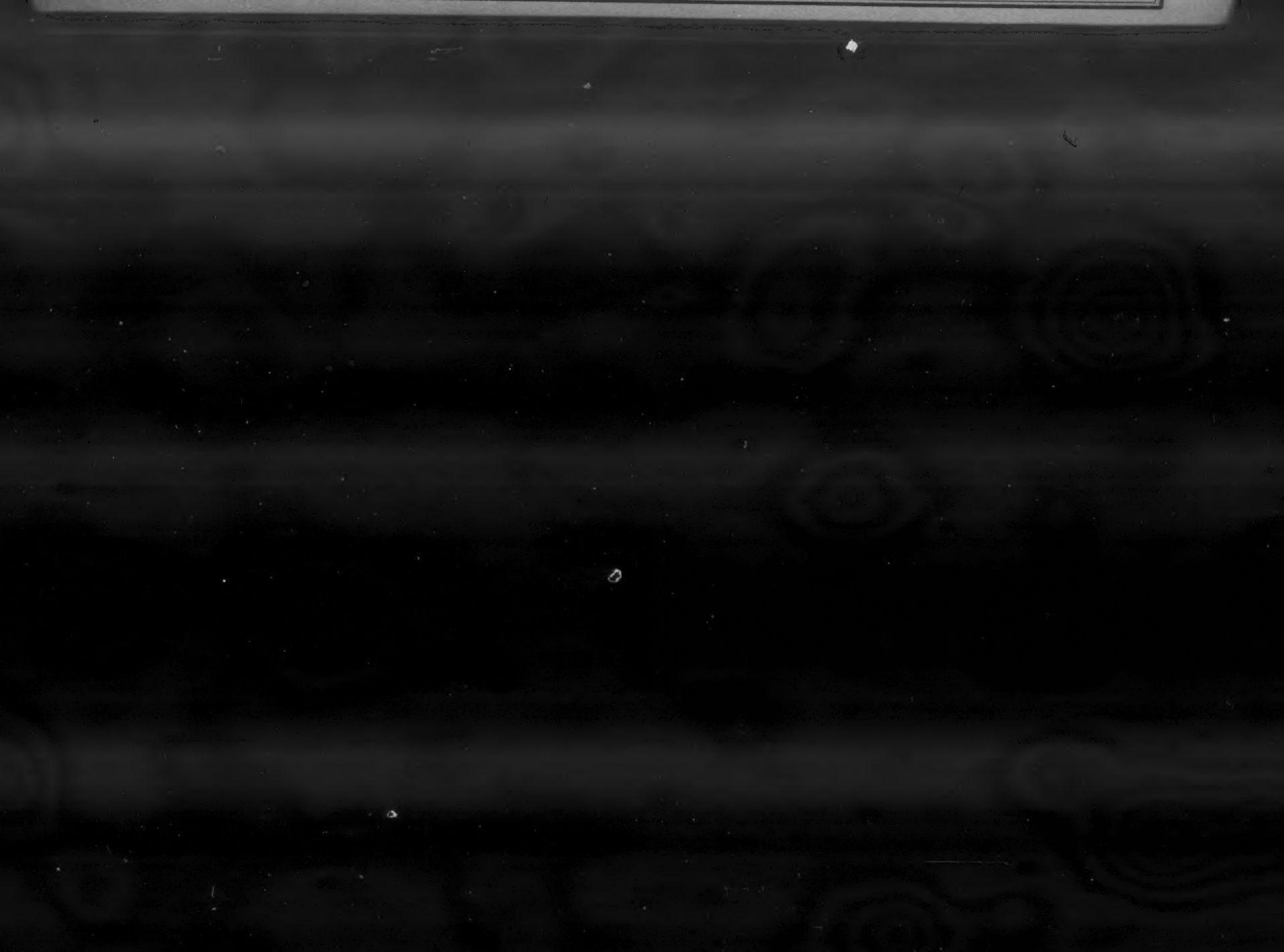

AMERICAN GAS ASSOCIATION MONTHLY

Allyn B. Tunis, Editor

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OUR OWN WHO'S WHO

Frank T. Hulswit

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LXVI

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FRANK T. HULSWIT, president of the American Commonwealths Power Corporation and chairman of its Executive Committee, was born in Grand Rapids, Michigan, in 1875, a great-grandson of the famous Dutch painter of the eighteenth century, Jan Hulswit, from whom he inherits a taste for art. After a modest education, he entered upon his first business venture as an employee in various capacities of The Michigan Trust Company, Grand Rapids, Michigan. In 1904 after a year of experience with one of the prominent investment banking houses of Chicago, he, with Ralph S. Child, organized the Investment Securities firm of Child, Hulswit & Company, which was later dissolved when he organized the United Light & Railways Company in 1910, which later changed its name to The United Light & Power Company, of which he became president. He resigned from The United Light & Power Company to organize the American States Securities Corporation and the American Commonwealths Power Corporation, which were later merged into the American Commonwealths Power Corporation, of which he became President.

Mr. Hulswit also is chairman of the Board of Directors of American Community Power Company, chairman of the Board of Directors of American Gas and Power Company, president and director of The American Corporation, chairman of the Board of Directors of Dominion Gas and Electric Company, chairman of the Board of Directors of General Public Utilities Company, president and director of Bangor Gas Light Company, president and director of Jacksonville Gas Company, director of Birmingham Gas Company, Lowell Gas Light Company, Minneapolis Gas Light Company, National Gas and Electric Corporation, and has affiliations with many other enterprises, clubs and associations, including the American Gas Association of which he is a director.

AMERICAN GAS ASSOCIATION MONTHLY

VOLUME XII | NOVEMBER, 1930 | NUMBER 11

Gas Industry's Vitality Shown at Convention

CLIMAXING a year of intense activity, the twelfth annual convention of the American Gas Association, held at Atlantic City, N. J., last month, attracted a record-breaking attendance, and aroused unbounded confidence, demonstrating in a definite way the vitality of the gas industry, and indicating genuine optimism for its future.

More than 6,400 members and guests registered—a record figure. This accounted for the best-attended general sessions and departmental and sectional meetings ever held.

Attracted by a comprehensive program touching on the many problems and all phases of the gas business, it was not unexpected that the attendance would be large, but the fact that the outpouring was record-breaking in a period of generally dull conditions was convincing proof that the industry's leaders are alert not to permit their trade to lag.

True to the best traditions of the association, meetings were business-like and developed a wealth of knowledge for the benefit of those in quest of information with which to deal with the new problems constantly presented as natural and manufactured gas develop to meet and anticipate the demands of the public. Development of new markets and conservation of natural gas may be said to have been key notes of the convention.

Both from the standpoint of pleasure and profit the Twelfth Annual Convention was voted a conspicuous success. From the moment Hon. Harry Bacharach, Mayor of Atlantic City, greeted the representatives of the industry, the convention clicked forward to new achievements.

From within and without the industry came men and women to help make the occasion the outstanding success it was. On the program were found such names as George B. Cortelyou, president of the Consolidated Gas Company of New York; Samuel Insull, Henry L. Doherty, Floyd Gibbons, Scott Turner, director of the United States Bureau of Mines; Mrs. Christine Frederick, household efficiency consultant; J. Paul Kuhn, member of the Illinois Commerce Commission; Clarence Francis, president of the General Foods Sales Company, and Edgar C. A. Bliault, of London, representing the British Commercial Gas Association; Davis M. De Bard, of Stone & Webster, Boston, Mass.; Earle Whitehorne, McGraw-Hill Publishing Co., New York, and many others.

Broadway artists and radio stars, including Jessica Dragonette, B. A. Rolfe's orchestra, and the Cities Service Cavaliers, helped round out the convention with entertainment features which drew capacity audiences into the beautiful ballroom of Atlantic City's Municipal Auditorium.

Two hundred and sixty exhibits of gas appliances and gas plant equipment, attractively displayed in the big auditorium, held the attention of members from morning until night. Many new developments were in evidence.

"Weather makers" that furnish heat in winter and cold in the summer were among the interesting displays that attracted especial attention. Despite their size, their lines were smart and their colors suited to needs of home, office or factory.

Another form of house heating which was well displayed in many new styles was the space heater. Not con-

Association Officers

Officers to serve for the ensuing year were elected at the Twelfth Annual Convention as follows:

President—Clifford E. Paige, vice-president, The Brooklyn Union Gas Company, Brooklyn, N. Y.

Vice-President—R. W. Gallagher, president, The East Ohio Gas Company, Cleveland, Ohio.

Vice-President—Arthur Hewitt, general manager, Consumers Gas Company, Toronto, Ontario, Canada.

Vice-President—N. C. McGowen, vice-president and general manager, Louisiana Gas Company, Shreveport, La.

Treasurer—William J. Welsh, president, New York & Richmond Gas Company, Staten Island, New York.

Directors, Two-year terms—Walter C. Beckjord, The Boston Consolidated Gas Co., Boston, Mass.; J. D. Creveling, H. L. Doherty & Co., New York City; Raymond Cross, The Ohio Fuel Gas Co., Columbus, Ohio; Henry L. Doherty, Cities Service Co., New York, N. Y.; Oscar H. Fogg, The Consolidated Gas Co. of New York, New York, N. Y.; Samuel Insull, Jr., Midland United Co., Chicago, Ill.; F. A. Lemke, Humphrey Company, Kalamazoo, Mich.; A. E. Peirce, Central Public Service Corp., Chicago, Ill., and Arthur Stockstrom, American Stove Co., St. Louis, Mo.

tent with being designed for fireplace, as well as ordinary space use, a new Spanish model was shown, planned especially for houses in California, the Southwest and Florida, where Spanish influences in house furnishings and architecture are prevalent.

Gas ironers, which iron the most intricate garment, were seen in all sizes to meet any demand. Also gas washers, incinerators and hot water heaters showed what they could do to simplify housekeeping.

Many new improvements in style and service of gas ranges and other domestic gas appliances were in evidence. The gas ranges especially showed numerous additions, designed especially to lessen labor, and add to general home convenience. In addition to being seen there, resplendent in color and effective in their new lines and styles, the gas range features to make home cooking a pleasure are numerous.

Clifford E. Paige
President

R. W. Gallagher
Vice-President

Ranges with on and off time controls show how the housewife can demand almost human service from the oven. A clocklike attachment makes it possible for the oven to be lighted automatically at an appointed time and shut off in similar fashion on schedule—all without supervision. Heat controls, automatic lighting, vertical broilers, a self-action broiler and many other types rival one another for perfection.

Many of the ranges are designed with table top sections for working space, several ovens have glass doors so that the roast may be watched in its progress. Insulation of ovens is an outstanding feature throughout.

As to conservation of natural gas, H. C. Morris, chairman of the Natural Gas Department, said:

"The past 12 months have witnessed much in the affairs and the progress of the natural gas industry. Our Association has recognized this fact and a large portion of all of its activities are now directed to subjects of interest to natural gas companies. At this convention, the general sessions and each of the section sessions have scheduled

Natural Gas Conservation

The American Gas Association in convention assembled reaffirms as a cardinal plank in its program, the effective conservation of natural gas, welcomes the cooperation of other agencies, and the support of the industry is hereby pledged to the plan so skillfully worked out by the Main Technical and Research Committee of the Natural Gas Department with the active support and assistance of the Bureau of Mines.

To Map Out Future Program

Resolved that the Convention believes the Five-Year Program of American Gas Association Activities, now in its fifth year, has resulted in coordination of thought, correlation of action, and makes highly important working out by the Executive Board of a further plan covering some definite number of future years.

To Make Survey of Merchandising

Resolved that the American Gas Association reasserts its belief in the value of cooperative sales with merchants and craftsmen and approves the recommendation of the president-elect for a national survey of this subject.

addresses, papers and committee reports which deal with natural gas.

"The Natural Gas Department, during my year as Chairman, has continued all of its previous activities and has added several new ones. The natural gas conservation movement was authorized at the New Orleans Convention, and our Main Technical and Research Committee has formed a definite program which will later be reported to you. The Committee on Federal Taxation was appointed early this year and it has already submitted a report on depreciation allowances on natural gas equipment for income taxation. In June, 1930, as a result of recommendation made at our New Orleans Convention, a Committee on Natural Gas Company Dues was formed and its report has been submitted to the Managing Committee. The Supply Men's Fund Committee has put into operation its plans for Natural Gas Fellowships at West Virginia University and the University of Oklahoma.

After considering invitations from several cities, the American Gas Association voted to hold its Thirteenth Annual Convention in Atlantic City, N. J., October 12, 1931.

"In February of this year, the first Regional Natural Gas Sales Conference was held in Pittsburgh and the success of this meeting has resulted in arrangements being made for a Southwest Regional Natural Gas Sales Conference to be held in Dallas on November 13 and 14, 1930. The Commercial Section is sponsoring this activity.

"The Association's Committee on Education of Gas Company Employees, assisted by an Advisory Committee of leading natural gas company executives, is supervising the preparation of a Home Study Course in Natural Gas at the University of Kansas. This course will be ready early next year.

Arthur Hewitt
Vice-President

N. C. McGowen
Vice-President

"These few examples indicate how increasingly active our Association has become in matters relating to natural gas. The entire Natural Gas Industry is moving ahead rapidly. Sales are estimated to have increased 20 per cent last year over the previous year and extensions to new territories are now going ahead at a more rapid pace than ever before. It is estimated that there were in this country at the beginning of 1930 about 80,000 miles of natural gas transmission lines. A recent estimate shows that 12,000 miles of additional natural gas pipe lines were either started or projected so far this year. With the completion of the extensions of natural gas service now definitely planned, natural gas will be distributed in 38 states. Of these, eight states and the District of Columbia have come into the natural gas picture this year. Natural gas is now produced in commercial quantities in 25 states.

"While viewing these rapid strides of our Industry, we are hopeful that all of the new ventures will be carefully engineered, properly financed and so constructed and operated as to maintain the present good standing and popular favor which our utility now enjoys.

"At this time when so many pipe lines are being projected both in the natural gas states and into sections of the country not now served with natural gas, and in cases with the exception of supplying natural gas as a replacement for manufactured gas, it may not be amiss to suggest a word of caution to those responsible for the financial success of such pipe lines; and also to the operators of manufac-

William J. Welsh
Treasurer

Arthur E. Boardman, who was president of the American Gas Light Association in 1893, was among the members attending the Atlantic City Convention. When his presence was observed, he was introduced by President Mullaney at the general session on October 14.

HENRY L. DOHERTY, of H. L. Doherty & Co., New York, was the last speaker at the final General Session of the Convention. Among other things, he said:

"I remember when I first slipped into a gas convention—there were four of us. The other three boys were older than I was. I remember one quite well—it was Frank Moses. He had a kind of a sense of guilt as if he were trying to get into a lady's bathroom. But we wanted to see these great men when they met at the gas convention in Columbus, Ohio.

"I am, I confess, one of the older men. I have been in the business for a long, long time. I am not a statesman; I am just a plain member, a business man and a member of the A. G. A. I am not a candidate for any office. I am not as lazy as I confessed at first. I want to serve but I can't. Unfortunately, I have gone through a long siege of arthritis and neuritis, and now that I am on my feet again, I am trying to make up for lost time, if there is still a place for me among these many brilliant and well-educated men.

"We are going through a great crisis in the gas business, and I have always said every time a new condition occurs, it offers a new opportunity for the men it brings. We are going through a condition when more and more artificial gas companies will be turning into natural gas companies. I remember when natural gas first came into use our manager said in ninety days it would be all gone, and it's still pouring in and pouring in and when I found that much of that gas came from a stone, which they called sand, I didn't think much of it, but when I found it was the same stone they made grindstones out of, I thought better of it. It's a long story, but I won't attempt to tell you that.

"I want to say a word or two about this convention, this industry and this society. I belong to a great number of societies and I do not want to disparage any of them. But I do want to say that this association has done splendid work. It has a wonderful spirit and a wonderful way of making friendships. And as I look back over my shoulder to the day when I stepped into that convention hall, I look back at all the many wonderful friendships that I have formed and to the fond memories of those friendships. Perhaps only once a year at best our convention meets, but nevertheless, you can trace back these beautiful friendships that go back over the years and go to the time when a new crowd comes in and crowds us all off the stage.

"In closing, I can only say, and I don't say anything in a religious spirit, but it springs from every one of the religions—'May the Lord watch between us, the one or the other, until we meet again.' Thank you, Gentlemen."

tured gas distributing companies charged with the protection of their company's investment when they take on the distribution of natural gas.

"The officers of the operating companies know and the information should be made available to the engineers and others making reports for investment banking houses that it is not safe to measure present-day probabilities of speed in building up the load by the results obtained by the companies early in the field.

"Ten years ago natural gas was sold for less prices than is now required. There has been an increase in the amount of useful energy secured from a ton of coal, mechanical stokers have brought the comparative furnace efficiencies closer together, furnace oil in home central heating plants and used in automatically controlled devices is a development of the past ten years. Time is required to replace electric heating elements when once installed.

"Possibly the most serious error into which those charged with the success of the new ventures may fall, is that of failing to give due weight to the reduction in volume of sales per customer per month, as a replacement of the service now rendered by manufactured gas. The force of this is so pronounced that, if ignored, the result will be an operating deficit rather than a fair return on the investment.

"Actual operating data from five cities that have recently changed over to natural gas forcibly supports this statement. The cities listed range from 100,000 to 500,000 population.

"The data shown at the bottom of page 483 compares the period from June to October inclusive in the last year of manufactured gas with the same period for the first year of natural gas. This five-month period being one in which no gas would be required for space heating and gives an accurate city wide comparison except as the volume of sales be favorably affected by natural gas rates and sales efforts.

"Such evidence as this forces the safe operator to the conclusion that the financial integrity of his property can be easily jeopardized by any schedule of rates that fails to provide substantially the same net revenue for the same service rendered as that now secured from his manufactured gas sales. A proper schedule should provide for the customer account cost in the first step, thus permitting low enough steps to successfully compete for the large volume of the sales in the heating load, which is necessary both to the company and the customer if the latter is to secure the savings and other advantages that are usually expected.

Departmental and Sectional Officers

OFFICERS were elected by sections and departments at the twelfth annual convention as follows:

Natural Gas—Chairman, H. C. Cooper, Hope Natural Gas Co., Pittsburgh, Pa.; Vice-chairman, H. L. Montgomery, Cities Service Gas Co., Bartlesville, Okla.

Accounting Section—Chairman, John I. Blanchfield, Brooklyn Union Gas Co., Brooklyn, N. Y.; Vice-chairman, Wm. A. Doering, Boston Consolidated Gas Co., Boston, Mass.

Commercial Section—Chairman, E. R. Acker, Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y.; Vice-chairman, Samuel Insull, Jr., Midland United Co., Chicago, Ill.

Industrial Gas Section—Chairman, D. W. Chapman, Peoples Gas Light & Coke Co., Chicago, Ill.; Vice-chairman, A. J. Peters, Consolidated Gas Co. of N. Y., New York, N. Y.

Manufacturers Section—Chairman, E. S. Dickey, Maryland Meter Works, Baltimore, Md.; Vice-chairman, David B. Kahn, Estate Stove Company, Hamilton, Ohio.

Publicity and Advertising Section—Chairman, Donald M. Mackie, Commonwealth & Southern Corporation, Jackson, Mich.; Vice-chairman, William H. Hodge, H. M. Byllesby Co., Chicago, Ill.

Technical Section—Chairman, R. G. Griswold, Cities Service Co., New York, N. Y.; Vice-chairman, I. K. Peck, Midland United Company, Chicago, Ill.

Clifford E. Paige, President-Elect, greets Bernard J. Mullaney, Retiring President, on Boardwalk at Atlantic City.

"Cooperation between companies and individuals and the exchange of statistics and information is especially desirable at this time in order that the dangerous mistakes and pitfalls along the line of progress may be avoided.

"There are many hopeful signs which point to progressive development. I would call your attention to the selling of gas as energy. I refer to the use of the therm basis in gas rates which provides for the sale of gas on a basis of its potential energy rather than volume. Another is the design of rates on a basis of the value of service. Where competition is keen, and we have competition in every phase of our selling, the recognition of the value of the service is a forward step, the realization of which is particularly helpful in natural gas enterprises.

"In these days of rapid progress, we can all more fully realize the value and benefits of our Association and of giving our active support to all of the many phases of Association work."

	City No. 1	*City No. 2*	*City No. 3*	*City No. 4*	*City No. 5*	*Average*
Btu. Manufactured Gas	550	530	560	525	600	553
Btu. Natural Gas	980	980	1070	965	965	992
Volumetric ratio 90	68.5	68.2	63.5	66	71	67.4
Btu. ratio 90	122	126	121	120.5	114	120.7

Home Service Directors Take Active Part

SIXTY-FIVE home service directors and others interested were in attendance at the Annual Home Service Luncheon held in connection with the A. G. A. Convention, October 14, at the Shelburne Hotel, Atlantic City, N. J.

G. E. Whitwell, chairman of the Commercial Section of the American Gas Association and vice-president of the Equitable Gas Company, Pittsburgh, addressed the group on "Impressions of Home Service." Among other things, Mr. Whitwell observed that while the one difficult obstacle of not being able to secure tangible evidence of its service has not been surmounted, home service in the gas industry can well take much credit for the increase shown in the yearly consumption of gas. In the Equitable Gas Company, the domestic consumption of gas has gone steadily forward in the four years in which they have had a Home Service Department.

"Home Service," Mr. Whitwell said, "is fundamentally sound if defined as a service taken to the home. It has grown a lot and has a lot further to go. It has become more than a mere cooking school. Through it is brought comfort, health, happiness and leisure to the home.

"Those who know Home Service the best, think the most of it or in other words, those who say the most against it, know the least about it."

Possible avenues of cooperation between Home Service Directors of the American Gas Association and home demonstration worker was the subject of discussion by Miss Florence E. Hall, extension home economist of the United States Department of Agriculture, at this same Home Service Luncheon.

That the program of the home service worker and the home demonstration agent has many similarities was pointed out by Miss Hall. "The matter of food and nutrition, the task of helping the home-makers plan, prepare and serve food that is attractive, appetizing and nutritious," said Miss Hall, "is our objective."

"The home service director of a utility company," Miss Hall continued, "should acquaint herself with the objectives of the extension programs as they relate to foods, nutrition and household management, and other points of contact between her own program and that of the Extension Service. Familiarity with the State Home Demonstration Leader, the State Nutrition Specialist, and State household management specialist, as well as county home demonstration agents in counties where home service departments are located, will make for closer cooperation."

Miss Jessie McQueen, Home Service Councellor of the American Gas Association, presided at the luncheon. Among those seated at the speakers' tables were chairmen of regional groups of directors: Miss Florence Chisholm, Malden, Mass.,

View of Exhibit of Twelfth Annual Convention

Miss Jane Wagner, New York, N. Y., Mrs. Ella L. Lambers, Milwaukee, Wis., Miss Ada Bessie Swann, Newark, N. J., and Miss Jessie Read, Toronto, Canada.

The Home Service Round Table on Thursday afternoon, October 16, was well attended by Home Service Directors, sales managers of gas companies and representatives of cooperating industries. Miss Ruth Soule, Brooklyn Union Gas Company, Brooklyn, N. Y., presided as chairman of the Home Service Committee. Miss Ina Lindman, director of educational field service of the General Foods Corporation, discussed a helpful plan of cooperation between food industries and Home Service Departments.

Miss Margaret Ingels of the Carrier Lyle Corporation pointed out how the subject of house heating may be presented by Home Service women and K. M. Clark, representing Miss Leah Anderson of the Ruud Manufacturing Company, brought out the many ways in which Home Service directors may spread the story of the many uses for hot water in the home.

Copies of all these papers will be sent directly to Home Service women.

Three subcommittee reports of the General Home Service Committee were reported by their chairman, Miss Jessie Read, of Toronto, representing Miss Hulda Ungericht, of Columbus, on "The Business of Home Service"; P. D. Warren, of Chicago, on "Increasing Per Cent of Contacts," and Miss Karen Fladoes, of Pittsburgh, discussed the status of the New Home Service Manual which is under way. Miss Fladoes, in detail, discussed the subject matter headings of the first booklet to be undertaken—that of "Home Contacts." It is proposed to edit a set of five booklets during the coming year, each one devoted to different phases of home service work.

The Home Service Round Table was held in the Crane Building and at the close refreshments were served by the Crane Company.

Radio Greetings

BY way of attempting to visualize briefly the significance of the Convention, Bernard J. Mullaney, president of the Association, broadcast the following message over a radio network on October 15:

"The American Gas Association is a thoroughly representative trade association. It represents the entire gas industry of the United States and Canada, both manufactured and natural; its membership includes practically every gas company from the largest to the smallest. It is cooperative in operation. The net of its aims and purposes, as stated in its constitution, is:

> "'To promote and develop the gas industry and to coordinate its activities, to the end that it may serve, to the fullest possible extent, the best interests of the public.'

"This purpose includes both better service to gas company customers and the safeguarding of investments in gas company securities. In the light of what is done year by year to achieve its objectives, the gas industry cheerfully invites comparison with any other industry anywhere on the basis of consistent and sincere effort for self-improvement and for better service to the public.

"This industry is having here the best attended and altogether the most successful convention in its history. It has the largest and most comprehensive exhibit of gas appliances and equipment ever assembled in the western hemisphere. These two facts reflect both the condition and the spirit of the gas industry at this significant time.

"In the face of general business depression and pessimism, the gas industry has not curtailed its programs for progress and expansion, and it has not curtailed application of the natural and practical ways and means to achieve expansion. The industry as a whole is thriving and it has complete confidence in the steady recovery of all business in this wonderful country.

"You ought to know this industry better. You can easily get better acquainted with it through your local gas company. And doing so will be good for you and good for us."

A. G. A. Leaders Address P. U. A. A.

INCREASED sales of from 15 to 50 per cent in household appliances have resulted from the maintenance of general advertising appropriations by public utility companies. This was revealed at the annual Fall conference of the Public Utilities Advertising Association, held at

(Continued on page 486)

New Directors and Chairmen

W. C. Beckjord
Director

J. D. Creveling
Director

Raymond Cross
Director

H. L. Doherty
Director

O. H. Fogg
Director

Samuel Insull, Jr.
Director

F. A. Lemke
Director

A. E. Peirce
Director

A. Stockstrom
Director

H. C. Cooper
Chairman
Natural Gas Dept.

J. I. Blanchfield
Chairman
Accounting Sect.

E. R. Acker
Chairman
Commercial Sect.

D. W. Chapman
Chairman
Industrial Sect.

E. S. Dickey
Chairman
Manufacturers Sect.

D. M. Mackie
Chairman
Pub. and Adv. Sect.

R. G. Griswold
Chairman
Technical Sect.

A. G. A. Leaders Address P. U. A. A.

(Continued from page 484)

Atlantic City, N. J., on October 13, when President Irving M. Tuteur, of Chicago, Ill., called upon the advertising representatives of the leading public utility companies to report on the results obtained from 1930 advertising expenditures.

The consensus of the meeting was that the advertising appropriations of public utility companies will be maintained at their present level or increased next year. Mr. Tuteur said that the facts revealed at the meeting clearly demonstrated that increased advertising, particularly at the present time, results in acceleration of sales.

More than 65 members of the P. U. A. A. were present at the meeting, which was held in the Hotel Traymore.

B. J. Mullaney, president of the American Gas Association, spoke briefly, commenting on the important work of the P. U. A. A., and the improvement that has been shown in public utility advertising during the past decade. Even now the industry does not realize the full benefits of advertising, he said, and the attention of the Association should be focused on larger programs with consequent better results.

A brief message from Alexander Forward, managing director of the gas association, was then read by Keith Clevenger, director of publicity and advertising for the Association, due to Mr. Forward's inability to be present. He said that dignified, truthful, convincing advertising is the only sort that will do the utility company and the advertising man any permanent good. He stressed close cooperation between the commercial and advertising departments as essential for success.

The great value of the P. U. A. A. is in interpreting the need for public utility advertising, according to Clifford E. Paige, of Brooklyn, N. Y., vice-president of the Brooklyn Union Gas Co., and president-elect of the A. G. A. He said:

"Speaking of the gas industry, the very fact that there are more than 12,000 uses for gas indicates that the industry must be doing some pioneering, some selling, and considerable advertising. Much has been said about putting the selling pressure on the lines which furnish the greatest ultimate return to the utility. My own observation is that no matter how much pressure has been put on such appliances, none has been withdrawn from the others. Our business requires so imperatively that we utilize every opportunity to get our equipment on our lines and to get it in active use that we cannot afford to let down in our effort in any direction.

"Surveys in the field will undoubtedly direct a proper apportioning of effort, as time goes on, and it may be said safely that no utility knows all it should know at this time to deal with the problem adequately. Your Association has done a great deal in showing utilities how to advertise. It is my conviction that your greatest work, however, lies in the future."

Hands Across the Sea

EDGAR C. A. BLIAULT, of London, representing the British Commercial Gas Association, brought the following message to the convention:

This is the first time I have had an opportunity of addressing an American audience and really, I would very much have preferred if Sir Francis Goodenough himself had been present to take this talk. We have in the past been in the habit of sending you telegrams of greetings and at our conferences in England, which differ in some ways to your conferences here, we have always been happy to have read out on the platform a telegram of greeting from your Association.

There is in our nationality a great brotherhood which binds us, the brotherhood of our industry, and although perhaps I feel a little difficult in speaking to you, I do feel that I am among friends and brothers, because we are all out to do the best for the gas industry whether we be in Great Britain or in America. The British Commercial Gas Association goes out more particularly for the sale of gas and I myself am more particularly interested, as you may realize, in the sale of gas. We have taken many examples from your efforts. We have applied them to a certain degree to our own situation and I personally have to thank some of the members of your Association for thoughts and ideas which have been beneficial on our side of the water.

Another View of Convention Exhibit

Bernard J. Mullaney

Address of President at Annual Convention*

By Bernard J. Mullaney

ELEVEN years ago today, at this same hour, we were assembled in the opening session of the First Annual Convention of the American Gas Association. On that occasion, with all men's minds still befogged by the consequences of the World War, President George B. Cortelyou said:

> "The business life of the world is in a state of extraordinary readjustment . . . as in all times of unrest, we are beset by a multitude of the hasty, the unthinking or the evil-minded with panaceas for the relief of conditions about which even the wisest among men and women hesitate to reach definite conclusions. The great mistake most of our present day theorists are making is that, while they are correct in the opinion that we are living in a world distraught, their remedies overlook the fact that the only effective cure will come through the age-tested formula of hard work, frugal living, economical government and thorough cooperation."

In those words, from eleven years ago, we have a prescription patly applicable to the present.

The difficulties of general business, during most of our association year, have been flavored with disappointment. They have seemed to increase as the year advanced beyond its second quarter, instead of declining as we thought—or hoped—they would. We have found that our difficulties are not peculiar to the United States. They are world wide and, in many countries, are complicated with hampering political factors. But to the free ranging mind, there is no reason for despair.

In some respects, both the current depression and the prospects of speedy recovery appear to be over-advertised. The first named, certainly, is not as bad as the chronic weepers imply. All of us who are over fifty have seen worse periods. It would therefore seem to be short-sighted—even silly—to forget what followed each of those periods in this wonderful country.

We get only a warped and out-of focus perspective from short-range comparisons with the immediate past. Nineteen-twenty-nine was a boom year—so booming that many of us got dizzy. Comparisons with years other than '29, or with an average of several years, will help to discourage pessimism.

One has to be at least half blind and negative-minded to be completely a pessimist at this time. President Hoover, at Cleveland the other day, reminded us of many encouraging factors that are ignored, as he said, by "a few folks in business and several folks in the political world who resent the notion that things will ever get better."

A serum for the stock-market-minded might also help. Never before in our time were so many people so affected. Continuance and prevalence of the disease can be verified by cocking an ear in the corridors, lunch rooms and other by-ways of any office or plant. It will be a better day when quotations stay put in the back pages of the newspapers and the stock-market-minded multitude goes back to work.

The gas industry has suffered less in this period than almost any other. Practically all of our slackened consumption has been in the field of large-scale industrial and commercial employment of gas, as shown by the monthly statistical reports from A. G. A. headquarters. There is no element of over-production or over-expansion in our situation. And industrial use of our product will come back, as general business recovers, and come stronger than before the slump. Advancement in the application of gas-fuel to heavy-duty industrial and commercial operations, which has been so marked in the last decade, is a guaranty of that return.

Our relatively comfortable situation demonstrates again the stability—stability with flexibility—of our industry. And that is a consideration of some importance to investors, to customers and to all who recognize the inter-related and inter-dependent character of the country's economic structure.

We of the gas industry have every right to be self-congratulatory on this relatively good situation. It is largely of our own making, not an off-shoot or by-product of favorable circumstances around us. It derives primarily from literal application of that formula given us at our first Association convention—hard work, careful management and thorough co-operation. And the manner in which we have applied the formula, as reflected in the recorded acts and doings of this Association, makes an inspiring chapter of industrial history. No industry anywhere can show more consistent and sincere effort for self-improvement and better public service.

There is continuing need of this work, management and co-operation. There is the more need of it, both within our industry and between ours and other industries, if we are to be in step with President Hoover's

* Presented at General Session, A. G. A. Convention, Atlantic City, N. J., Oct. 14, 1930.

reasonable suggestion that the present situation "does not require us to wait upon the (economic) recovery of the rest of the world," and that "we can make a very large degree of recovery independently of what may happen elsewhere," as we did in 1922.

This independent recovery will be obstructed by two classes of people. In the first class are President Hoover's "folks who resent the notion that things will ever get better." In the second, are those mentioned in my quotation from Mr. Cortelyou: "a multitude of the hasty, the unthinking or the evil-minded," with their ready-made panaceas, in which some kind of more-government-in-business is universally the chief ingredient.

Radicalism, whether communistic red or socialistic pink, is never dangerous in this country when it takes the spot-light without a mask, as it used to do before the war. In these times and for these times, with deliberate intent, it mostly goes in disguise and parades itself as "progressive action," as so-called "liberalism" and "social advancement" and as other varieties of alleged "reform." Evidence of it is all around us if we but look.

In relation to this phase of national life, American Industry generally needs nothing so much as it needs an active sense of its community of interest, and of the obligations thereof whenever any branch or segment of business and industry is threatened with governmental encroachment. Government ownership proposals, for example: whether federal, state or municipal; whether in the field of transportation, of public utility service, of fertilizer production, of insurance or some other—every last one of them is as definitely socialistic *in its ultimate purpose* as a Russian soviet decree abolishing all private property at one stroke. It is fatuous self delusion to think otherwise.

In meeting these proposals, there is no half-way stopping-place for any of us who get our living by business and industry. One step in "socialization" of business, if unchecked, leads to another. That is a law of Nature. A small-pox epidemic, remember, is only an accumulation of individual small-pox cases.

Resourcefulness and adaptability in the face of changing conditions have been characteristic of the gas industry. There is apt illustration in our development of the heat-service load when the lighting-service load began to slip. Other changes, now apparently impending but not all clearly defined, invite us to careful, long-range study of trends and possibilities.

Natural gas—the spectacular growth in its production and long-distance transmission—engages the interest and attention of the entire country. It is probably the most important business development of the past three years in all American Industry, for it points to significant changes in a large part of the country's economic, industrial and domestic life.

No one can predict how far this development may extend, but, assuming that our geological knowledge is reasonably accurate, it is conceivable that a degree of stability may be reached within a year or two upon which an approximation of the future may be based. Meanwhile, many questions asked daily by economists, by bankers, by our customers and by our own associates in the industry—questions of transmission expansion, of distribution, of gas mixture, and of ultimate rates —must go unanswered.

At the moment, we are rapidly becoming largely a natural gas industry. Dealing with the effects of this calls for the highest degree of executive information and judgment. The best thought of our best men, real industrial statesmanship, is needed for the problems of assured supply and of financing, including the prevention or control of wildcatting in securities; it is needed for the problems of protecting the investors in existing gas enterprises, for the problems of price and rate adjustment, and for a multitude of other problems.

Unless rates are right, a gas company's revenues may be impaired even to the point of disaster. Unless rates are right, the full usefulness of natural gas in its potential employments, both industrial and domestic, will be restricted. Unless rates are right, customer-dissatisfaction and public hostility of highly troublesome character, may be engendered.

These problems concern the producers quite as much as they do the marketers of natural gas. What has been said about government-in-business also has some bearing here.

Natural gas is, at this time, especially conspicuous among "God's gifts to humanity," as the radicals say it. Humanity cannot use the "gift," of course, until it is made available on the user's premises. But that does not stop effective play on the phrase by those who want to "socialize" and governmentize industry. They have their eye on this business. The more intelligently we handle the business, the less they can do to hurt it. And, in the long run, stabilization of the business will be more profitable to all concerned than trying to squeeze the last possible nickel out of it at the earliest possible moment.

We may well take pride in the fact that the American Gas Association has already recognized its share of responsibility, insofar as it can, for conserving this great natural resource. The Natural Gas Department is proceeding logically and sensibly, and with continuity of purpose, in co-operation with other agencies, to study and deal with the distressing waste of natural gas. In line with this effort, we are to have the pleasure this morning of hearing from a national authority on the subject of natural gas supply and development.

The growth and vigor of our industry is aptly demonstrated by the unparalleled exhibition in the great hall downstairs. This exhibition has been made possible by the skill, confidence, resourcefulness and enterprise of our manufacturers, and they have made it the greatest display of gas equipment and appliances ever assembled in the Western Hemisphere. Careful inspection of these exhibits is essential to the gas man or woman who would be fully informed. It is appropriate here to acknowledge the contribution of our manufacturers to the usefulness of the Association.

In the Association's earlier years, it was the custom of the President in his annual address to describe the activities of the organization. As President Fogg said last year, this is no longer necessary. With the development of Association Work, there has also arisen a fairly complete program of keeping the industry advised on the problems with which the Association is dealing and of what is done with them. The regular and special publications from headquarters, the reports of our committees at this convention, and in the interim between conventions, and the reports of the Treasurer and the Managing Director, apparently cover the field.

These reports, in my judgment, are ample confirmation of the ability of the Association, guided by its Executive Board and faithfully served by its sections, committees and headquarters staff, to deal adequately with the problems of the industry as they arise. They deserve your careful study. And on one or two aspects of them, as reflecting Association activity, I would add a word of comment.

If it were ever true that our profits were made in the retort house, it is true no longer. Our technical skill is of the highest, and our profits, if any, now derive largely from the efficiency of the selling organization, including the advertising department, from the accuracy and comprehensiveness of statistical and other information, and from the character of service we render the public.

It is gratifying that in our day no apologies are needed for the appliances, domestic or industrial, that we offer to the public. We have caught the spirit of modernization in style, attractiveness and convenience, as applied to gas burning appliances. Step by step the research and development work of the Association in the industrial gas field, has transferred point after point from speculation to fact. Our industrial gas sales engineers now feel and display confidence in the efficiency of our product, a confidence no longer tempered with the doubts of a few years ago. This is also true of domestic appliances, thanks largely to the work of our Laboratory at Cleveland, and to the ready cooperation of appliance manufacturers. We have forced recognition of us as leaders in the art of applying heat in a practical manner, based on scientific knowledge. And our program calls for the development of every fact that has a bearing on the application of heat in the industries and the homes of the nation.

Realizing that our main job is to sell our product, we have developed with careful thought and planning, courses of instruction in salesmanship for both the domestic and industrial gas fields. We have prepared and are ready to present to the industry a study in sales management. We have launched a course in customer contacts. The results of these efforts, with the whole-hearted cooperation of the units in the industry, will very soon produce a new feeling among our own sales employees and with our public.

Cooperation with other industries and businesses engaged in the sale of gas burning appliances is beset with difficulty in some quarters. In most cases the gas company has created and is maintaining the market for these appliances and to all appearances we can never abandon this position of leadership, at least not for many years. Yet sympathetic understanding with dealers, many of whom are, or are becoming, real merchants, is being promoted in what is perhaps a major portion of the industry.

In some localities conditions are not so happy. I have faith that in every locality a satisfactory solution can be worked out. While it is true that the gas companies have done most of the work in creating a demand for gas appliances, we should not deny ourselves a selling service through sales allies which may, at some points and under some circumstances, be as good as our own, if not better. Later in the convention, Vice-President Paige, who has a position of leadership in thought and action on this subject, will give it specific discussion.

If able and far-seeing leadership in the Executive Board, and earnest service at Headquarters, can keep our industry dealing with changing problems of the times as they arise, then my confidence in our ability to keep abreast and ahead of the times will be justified. So long as this is done, we need fear no competition and we shall be well fortified against governmental encroachment. But we must keep on doing it and keep on telling our story in every legitimate way.

To our Vice-President, Mr. Paige, to our Treasurer, Mr. Welsh, to the Association's directors, to the officers of our Sections, and to the Chairmen and members of our general and sectional committees, I make grateful acknowledgment for their whole-hearted efforts in behalf of the industry and for the support they have given me throughout my administration.

$17,500 in Prizes for Arc Welding

THE second Lincoln Arc Welding prize competition offers gas and other engineers and designers substantial rewards for their skill and ingenuity in utilizing the advantages of arc welding in the redesign of any present product or in the design of any proposed product or structure. For the forty-one best papers describing this work $17,500 will be awarded by the Lincoln Electric Company, Cleveland, Ohio, as follows:

For First Prize Paper	$7,500
For Second Prize Paper	3,500
For Third Prize Paper	1,500
For Fourth Prize Paper	750
For Fifth Prize Paper	500
For Sixth Prize Paper	250
For Seventh to Forty-First Prize Papers	each 100

The jury of awards that will judge the papers entered in this competition, will be composed of the faculty members of the Electrical Engineering Department, Ohio State University, under the chairmanship of Professor Erwin E. Dreese, head of the department, and such others as he may select.

The purpose of the second Lincoln Arc Welding prize competition, as announced by its sponsors, is to stimulate engineers and designers in every line of industry to think of the manufacture of their own products by the use of arc welding and to increase their knowledge of the feasibility of its application.

The competition is open to any person except the employees of the sponsors. The closing date for the competition is October 31, 1931. For complete details of the rules governing the competition address the Lincoln Electric Company, P.O. Box 683, Cleveland, Ohio.

Development and Expansion Marks Industry's Year*

Gas Spreads into New Fields of Usefulness

By Alexander Forward
Managing Director,
American Gas Association

ANY long-range view of the activities of the American Gas Association leaves as the outstanding impression, continuity of program and resoluteness of purpose. The moving picture of Association work over any extended period reveals little that is haphazard and much that indicates the careful unfolding of definite plans, flexible nevertheless and adjustable to changing conditions.

For this fact the industry is indebted equally to the Five Year Program of Association Activities now in the midst of its fourth year, upon which all of our plans are based, and to the careful and balanced consideration given to every project by our Executive Board. An industry with such a background ought to pretty well measure up to its opportunities and responsibilities, and could scarcely rest upon surer foundation.

One could at this point be fairly asked the question, what are the essentials of this program? I reply, careful studies of our present and potential markets, critical appraisal of the forces of our competitors, rates devised to command the market and to extend our service to the public, thorough equipment of all our sales forces, complete statistical knowledge of the industry, ability to tell our story to the people, research in pure science and in practical application, maintenance of our splendid technical skill, perfecting the efficiency, safety and attractiveness of our appliances, and, the inevitable result of the combination of these elements, best relations of our customers and employees.

It is impossible within the space of a brief report to even summarize the activities of the Association. All that may be done is to present a few high-lights bearing upon our major objectives.

More intensive development of existing markets and expansion into new fields of usefulness marked the year 1929 in the American gas industry.

During that year the revenues of the industry in the United States aggregated $924,000,000, an increase of nearly 5 per cent over the preceding year. At the close of 1929 its customers numbered nearly sixteen and a half million, a gain of more than 500,000. To the service of these customers was dedicated an investment estimated at 5 billion dollars.

The striking progress in natural gas developments is indicated by an increase of 22 per cent in the amount of natural gas produced and delivered to consumers during 1929. This unusual growth resulted in large part from the completion of many new distributing systems for cities and towns not previously served with gas.

Of the total consumption of natural gas during the year, about 19 per cent represented domestic uses, the remaining 81 per cent being devoted to various industrial purposes.

Alexander Forward

Domestic consumption of natural gas in 1929 aggregated 360 billion cu.ft., an increase of 12 per cent. At the close of the year the number of domestic customers totalled over 5 million, a gain of 18 per cent. Another significant feature of these data was an increase of 46 per cent in the quantity of natural gas consumed in the generation of electric power.

Despite the generally lower price levels of competing fuels prevailing throughout the year, sales of the manufactured gas industry aggregated 524,100,000,000 cu.ft. in 1929, or an increase of nearly 6 per cent over the preceding year. Sales of gas for house heating purposes registered the largest gain during the

* Annual report presented at General Session, A. G. A. Convention, Atlantic City, N. J., Oct. 14, 1930.

year with an increase of approximately 30 per cent.

Industrial-commercial sales also expanded materially, rising from 147,600,000,000 cu.ft. in 1928 to 163,100,000,000 cu.ft. in 1929, a gain of 10.5 per cent.

For the third successive year the production of water gas continued to decline, production in 1929 amounting to only 224 billion cu.ft., a decrease of 6.7 per cent from the preceding year and a drop of more than 11 per cent from the peak year 1927. On the other hand, there was an increase of more than 25 per cent in the quantity of by-product coke oven gas produced in the plants of gas utilities. At the end of 1929 there were 21 such plants owned and operated by gas utilities.

Coke oven gas purchased from merchant coke and steel companies increased nearly 22 per cent during 1929. At the close of the year there were 34 such plants supplying coke oven gas for distribution by gas utilities. Of these 34 plants, 18 were connected with the iron and steel industry, while 16 were operated by merchant coke companies.

These changes in gas production are reflected in the fuel requirements of the industry. As indicated by Chart 4, the amount of coke consumed by the industry itself declined for the second successive year, dropping from 4,188,000 tons in 1928 to 4,073,000 tons in 1929, a reduction of nearly 3 per cent. Of the coke used by the industry, 2,470,000 tons were consumed as generator fuel for water gas manufacture and 1,603,000 tons were used as bench and boiler fuel. Another significant feature of these data is an increase of 13.4 per cent in the amount of bituminous coal used as generator fuel in water gas manufacture.

In 1929 the operating revenues of the industry increased by nearly 15 million dollars or 2.8 per cent. Operating expenses, however, registered an actual decrease, dropping from $302,110,000 in 1928 to $299,872,000 in 1929. In the former year, operating expenses other than taxes absorbed 64 per cent of operating revenues, whereas in 1929 this proportion had dropped to 62 per cent.

Taxes paid by manufactured gas companies have shown a continued and persistent increase during the past few years. In 1924 taxes constituted 8.7 per cent of the operating revenues of the industry, whereas by 1929 this rate had risen to 9.7 per cent.

This ever-mounting burden of taxation, included necessarily in the rates paid by the public, makes one wonder what limit there will be to the practice of making public utilities act as the collectors of taxes from their customers to meet the constantly increasing expenses of government.

In spite of this increasing proportion of operating revenues absorbed by taxes, income from operations registered an increase of more than 12 million dollars, or nearly 9 per cent during 1929. An especially significant feature of these data is a decline of 4.3 per cent in fixed charges during 1929. This was doubtless a reflection of conditions prevailing in the security markets throughout most of that year, which were especially favorable to the flotation of stock issues. This led many companies to strengthen their financial structure by calling or retiring bond issues outstanding and substituting additional issues of stock.

As a result of this policy, while fixed charges decreased by $2,302,000, the income available for such charges increased $8,970,000, so that net income available for dividends and surplus increased by $11,272,000 or nearly 12 per cent.

During 1929 operating expenses per thousand cu.ft. of gas sold were nearly 4 cents less than for the preceding year. While it would be difficult to ascertain what proportion of this was due to increased managerial efficiency and how much was the result of the generally lower prices for fuel and other materials which prevailed during the year, it is of interest to note that as a result of this lowering in the cost of production, the industry collected on the average of 3 cents less for every thousand cu.ft. of gas sold to consumers than in 1928. At the same time there was available for stockholders dividends and surplus more than one cent additional for every thousand cu.ft. of gas sold during the year.

At the close of 1929 the manufactured gas industry in the Dominion of Canada served 530,000 customers, an increase of 6 per cent during the year, while the investment dedicated to these patrons aggregated more than 65 million dollars. More than 18 billion cu.ft. of gas were manufactured during 1929, representing an increase of nearly 15 per cent over the preceding year.

The initial months of the current year 1930 witnessed a broadening of the Association's activities to include monthly statistical reports from our natural gas companies, and it is both a privilege and a pleasure to be able to attest to the splendid cooperation and assistance displayed by these companies in the inauguration of this service. Although started hardly more than 8 months ago, reports are now received regularly from companies representing more than 80 per cent of the public utility distribution of natural gas.

However, in considering the comparative data on the industry for the first eight months of 1930, it must be borne in mind that this period witnessed a recession in general industrial and economic activity fully as severe as any ever experienced by the trade and industry of this country. During this eight-month period the production of bituminous coal declined more than *12* per cent from the corresponding interval of 1929, the output of crude petroleum dropped 8 per cent, pig iron production was down 20 per cent and steel ingot production 23 per cent. During this same period the number of freight cars loaded dropped 11 per cent while the production of automobiles declined by more than 36 per cent.

Despite this array of adverse influences, however, the group of natural gas companies reported sales of nearly 340 billion cu.ft. for the first eight months of 1930, a decline of only one-half of one per cent from the corresponding period of 1929. The revenues of these companies for the same period aggregated about 171 million dollars, compared with 172 million a year ago.

In response to the generally de-

pressed condition of trade and business, natural gas sales for industrial purposes declined by more than 10 per cent, but this was practically offset by the industry's program of expansion into new territory where gas service was not previously available. While final figures covering the entire production and consumption of natural gas during the 8-month period are not available, provisional estimates indicate that production aggregated more than one trillion, two hundred and seventy-two billion cu.ft., an increase of 3.4 per cent over the same interval of 1929. The consumption of natural gas for the generation of electric power during the first eight months of 1930 continued at a rate about 17 per cent above the preceding year, despite the fact that during the same period the production of electric power increased by only four-tenths of one per cent.

Because of the relatively smaller proportion of industrial business, manufactured gas sales were not affected to the same extent by the general decline in economic and business activity. Reports from companies representing over 90 per cent of the manufactured gas industry indicate sales for the first eight months of 1930 of 239 billion cu.ft., an increase of somewhat less than one per cent over the corresponding period of 1929.

The declining trend in water gas production continued during the current year, production for the eight-month period averaging more than 5 per cent under the levels of the previous year. The quantities of coke oven gas produced and purchased, however, increased 7 per cent.

Our efforts to promote the sales of our product continue steadily.

Careful studies have proceeded through a joint committee of the Commercial and Accounting Sections on merchandise accounting with the result that the attention of the industry has been directed to this subject both from the policy and accounting angles. It is our program to build up a system of comparing the merchandising and promotional costs of representative companies, together with data on the estimated load added through these activities. It is certain that the accumulation of this information and its adequate study will indicate more definitely the desirable policies in these matters.

The study course in sales administration and management is unique. It will constitute the first attempt of any trade association or any industry to critically analyze the sales policies and methods which have proved best for the industry and to study this broad subject upon a comprehensive basis. This study course, based upon the most painstaking research and prepared with the most careful thought, will undoubtedly constitute the most important undertaking of the Commercial Section during the coming Association year.

Competition with other fuels in the cooking field has had special attention. The course in domestic gas salesmanship has been highly successful. Sales Conferences have been well attended and have proved their usefulness.

In home service, we have had our most significant year. The course in domestic gas appliances was again given at the Cleveland Laboratory and we cooperated as usual with Columbia University's course on household engineering. Seventy-five gas companies, including many of the larger concerns, reached a total of more than four million women through home service workers last year. The number of home service departments in our gas companies has advanced from 92 in 1926 to 331 in 1930.

Continuing a barest outline of our section work, the Industrial Gas Section has in full operation an Industrial Gas Salesmanship Course with more than 400 enrollments. Installation data on Industrial applications has reached a large total and during the year about 50 new data sheets have been published. Interesting reports have been made on competitive features of other fuels and special service letters are issued from time to time to members of the Section including recently a bibliography and special articles on industrial work. We cooperate extensively in the exhibitions of other industries to which we desire to appeal. The industrial series book on large volume water heating recently issued has received marked commendation for the new data contained therein and is believed to be the most important single contribution so far compiled on water heating with gas.

The scope of the work of headquarters Statistical Department has steadily widened. It is now easily one of the most valuable services rendered by the Association to the industry.

Special services have been undertaken during the year at Headquarters to manufacturers, including the beginnings of comprehensive manufacturing statistics. Other services have been planned and approved.

Our educational work has been enlarged. Through our scholarships, research activities, and other contacts with colleges and universities we are enabled to assist them in those portions of their courses which touch upon the technical and practical details of our business.

In the preparation and launching of the Association's course on customer employee relations, a notable step has been taken. Prepared under the supervision of the Committee on Education of Gas Company Employees, this course is to all appearances destined for a marked impression in the industry's life.

Again, to pick out a single item from many, the results of the work of the Accounting Section in the development of office labor-saving devices are reflected in economies of operation among our companies.

Our Committees on Rate Fundamentals and on Rate Structure have given careful and helpful attention to the problems relating to their work.

Our activities in relation to the safety of our employees and the public have shown gratifying progress. Reports on all of these matters are before you in printed form and are amplified by addresses and discussions at the various meetings.

There is no slackening of the significant interest in our industry in research. We are making satisfactory progress in the research work initiated and supervised by the Technical Section relating to the protection of pipe and to pipe jointings.

The Section is also cooperating with the Bureau of Mines in an investigation in the gas, coke and by-product making qualities of American coals which in years to come will afford a sound basis for developments in the industry.

With unfailing resolution and with the continuity of purpose to which I have already referred, the Executive Board through the Committee on Industrial Gas Research is continuing our program in the fundamental scientific facts governing the use of heat in industry and in the development of efficient industrial gas-burning appliances. Our reports indicate the splendid progress that has been made and demonstrate clearly the comprehensiveness of our program.

We have found in practice that a most valuable part of the work of this Committee lies in cooperation with the national organizations of the other industries which we are trying to serve. The viewpoint of their leaders is sought and secured and we find that most of these organizations represent a good cross-section of opinion and thought in their line. This is followed by dissemination throughout these national organizations of the results of our research and we consider them a primary outlet for the release of scientific and practical facts brought out by our workers. It is a pleasure to mention particularly in this connection such organizations as the American Society for Steel Treating, the American Ceramics Society, the American Bakers Association, Bread and Cake Bakers Association of Canada, the American Foundrymen's Association, the National Research Council and the American Society of Heating and Ventilating Engineers. Supplementing these Associations, state and local groups are often very helpful.

It becomes more and more evident that we are destined to heat the buildings of the country. It is unthinkable that anything else can ultimately be used so long as we have the ideal fuel and efficient methods of application.

In a word, we are either prepared or are preparing ourselves to meet any demand. We are ready for 100 per cent adaptability to almost any heat application.

Refrigeration with gas has grown by leaps and bounds and it becomes increasingly evident that we have the best fuel for that purpose. The next step is house cooling and air conditioning with gas. Installations already in operation show most encouraging progress and further experimental installations are being arranged for the summer of 1931. Here lies a gigantic field, being made ready for us and for which we are preparing ourselves.

Long after we are all gone, the Association's Laboratory in Cleveland will stand a monument to those who planned, guided and brought to successful operation this outstanding achievement in American industry.

The network of natural gas transmission lines throughout the country presents some interesting speculations. This greater natural gas service is making possible in many communities the use of gaseous fuel and educating large portions of the rural and semi-rural population in the use of our product. No one can say how long natural gas will be available, but some day we will approach depletion. Perhaps the groundwork will have been laid for transmission over great distances of manufactured gas through pipe lines. Natural gas is now a main thought and center of activity in Association affairs.

In recent years there is a gratifying increasing tendency to suitably recognize service to the industry. We have the Charles A. Munroe Award for the individual judged by the Board to have served best during the year; we have the Meritorious Service Medal, the generous donation of Walter R. Addicks, for gallantry in life saving; we have the splendid contribution of medals and certificates by Thomas N. McCarter for rescuing human lives. With great pleasure the Board has just announced the institution of the Samuel Insull Award for the gas company which during the year makes the best record of advancement. Mr. Insull has done a magnificent thing for the industry by donating and financing this award.

Summing up, the problems and the possibilities of the gas industry are intriguing to the imagination and offer opportunities for solution to the best minds of the country. We are indeed in a changing world so far as our industry is concerned and the future belongs to him who can grasp its potentialities and master its opportunities.

In merchandising, in the method and manner of sales of our product, in the maintenance and improvement of adequate service to the public, in our relations with our customers and with our employees, in engineering, in rate-making, in publicity and advertising, and in research and manufacture, we have the elements to attract the best minds of the age. The Executive Board's program is to equip the industry to meet all competition in furnishing the fuel of the world.

Our President, Mr. Mullaney, has given to the industry a notable year of administration. He had been ready for service at any and all times, has travelled thousands of miles and has made innumerable addresses. He has been a fountain of wise counsel and understanding and the tribute already paid to him by the Executive Board is more than deserved. The other officers and the directors have given freely their best efforts and thought to Association work. Headquarters staff and employees have registered another year of loyal and devoted effort to the Association and its program.

Minimum Bill Authorized

THE Washington Gas Light Company and the Georgetown Gas Light Company have been authorized by formal order of the Public Utilities Commission of the District of Columbia to charge for the first time in the District a minimum monthly bill. The amount is 75 cents net or 85 cents gross.

The company is also authorized to put in effect a house-heating rate based on $2 per month per 100 cu.ft. of maximum hourly demand during the seven heating months, October to April, plus a consumption charge of 60 cents net per 1,000 cu.ft.

The domestic consumption rates for the company are $1 per 1,000 cu.ft. for the first 1,500 used in any month and 90 cents per 1,000 cu.ft. for all in excess of 1,500.

Serving Our Public*

By Geo. B. Cortelyou
President, Consolidated Gas Company of New York

Geo. B. Cortelyou

THE Executive Board, at its meeting on September 17, 1930, formed an advisory body on public relations, consisting of the Past Presidents of the Association. The initial duty assigned to this group, at the suggestion of President Mullaney, was to present to this Convention an outline of the activities of the Association relating to what, for want of a better term, may be called public relations. Our assignment apparently did not contemplate at this time any survey or summary of public relations policies and practices of individual companies, and indeed the short time that has elapsed since the Board's action was not sufficient for the collection of the necessary material for this purpose.

When the American Gas Association was organized, the advisability of creating a public relations section or public policy committee was given most careful consideration. It was decided not to do so, it being the consensus of opinion of leaders of the industry that public relations, whether in the executive, legal, accounting, technical, sales, safety, publicity or any other department; in a word, all the activities of the Association must affect, in some degree at least, our relations with the public we are organized to serve.

The wisdom of this policy has to all appearances been demonstrated. We are more than ever of opinion that public relations should not be the exclusive prerogative of any one group or section. It concerns too many of us. Its tendrils reach into every department of our business, and affect and are affected by every employee regardless of the nature of his duties or position. It is entirely proper that such components of the whole as are separable should receive the consideration and study of those groups to which they logically belong. Industrial relations, commercial or customer relations, publicity, advertising—these and other so-called public relations activities should all be considered in their proper place rather than segregated under any one head; but it also seems proper that some group should endeavor to harmonize and coordinate these various activities and keep them from extending into unrelated fields or duplicating too much the work of others. It is for this purpose that your Executive Board has appointed this advisory body, upon which, as Senior Past President, I am asked to serve as Chairman.

While I repeat that the Association has not felt the need of a separate agency to deal with public relations as a whole, there is no phase of our work which has not in some degree a public relations aspect. That broad application of course includes departments and individuals who may have no direct contact with the public at all. It will be well for us to recognize, as fundamental to an intelligent discussion of this subject, that underlying all else is a satisfactory service rendered at a satisfactory price. It is idle to discuss other features of public relations unless that foundation is assured.

In a recent conference, President Mullaney commented on the fact that the term "public relations" is not a good one, and that if it ever was it has been used in so many connections that it has lost much of its original meaning. To some persons, as he said, the term connotes more or less a relationship with regulatory bodies and with public officials; others (mostly outside the public utility industries) give it an implied propaganda significance, which is not at all what we mean by it; while still others restrict the term exclusively to relations with customers.

"Public relations" has had many definitions. Perhaps no one of them fits the situation exactly. From one source it is defined as "the process of keeping industry human in all its contacts with customers, employees, and the rest of the public, to the end that management may balance the best interests of the customers and the employees with the maintenance of public confidence and the realization of a fair return on the property devoted to public use."

Another definition, taken from a recent publication is this: "Good public relations is best achieved by operating a property so as to please as far as possible the four elements of customers, of employees, of stockholders, and of official bodies but yet so that the property will develop physically and economically. . . Success calls for . . . a fine blending of these elements into a unified program whose ultimate aim is: a company with which it is pleasant to do business."

Now, as your President well said in the Conference referred to, no consideration of our relations with the public can be adequate without recognition

* Delivered before General Session, A. G. A. Convention, Atlantic City, N. J., Oct. 15, 1930.

of the prime factor of employee relations. "Because those employees in their contacts over the counter and in the reading of meters and collection of bills and answering telephone calls, and all the other details of the service, are going to determine the opinion the customer has of the company."

So we find that one of the most direct approaches to the subject comes through the Association's Committee on Education of Gas Company Employees in the course in Employee-Customer Relations. This course is offered to company members as a definite means of training employees to give satisfactory service in their contacts with customers. It goes without saying that the success of this course of study is dependent upon its adequate presentation and application, and that means the enrollment and cooperation of all contact employees.

Again, home service may be defined as largely directed to the creation and maintenance of good public relations, yet it is carried on by our Commercial Section which, in the last analysis, is organized to promote the sales of our product. The Home Service Committee sponsors two educational courses at Columbia University and at the American Gas Association Testing Laboratory, for the purpose of training home service workers to be sources of information on subjects of direct interest to home makers, and through personal contact with individuals in homes and with organized community groups, to establish confidence in the company in the minds of the buyers and users of domestic appliances.

Again, the Statistical Department at Headquarters has a definite public relations duty in presenting to actual and potential investors throughout the country both the fundamental and long-term aspects of the industry, and short-term information of current developments. Obviously, the Statistical Department in the preparation of data for company members, affiliated associations and individual members, renders an essential public service.

The Safety work almost speaks for itself, since it is the aim of the Committee on Accident Prevention in its various activities not only to protect the lives and health of employees but to safeguard the welfare of the public. Yet this very positive and valuable public relations activity is directed by a committee whose name is not fully descriptive of this side of its work.

The Accounting Section has had for years a Committee on Relations with Customers, dealing with the contacts which office employees of gas companies have with the customers and the rest of the public through the complaint desk, billing operations, meter readers and others. The Committee reports progress annually at these conventions.

The Technical Section might at first glance seem to be removed from public relations work, and yet through its Distribution Committee, it deals regularly and consistently with contacts with customers in all cases where a company's distribution department has these contacts, such as street operations, the handling of street barricades and meter setting.

The Educational Committees, including those of the Natural Gas Department, have very definite public relations results in mind through such agencies as the Home Study Course in Manufactured Gas at Columbia University, the Home Study Course in Natural Gas at the University of Kansas, the Elementary Gas Course soon to be offered by Rutgers University, and the scholarships financed by the income from the natural and manufactured gas educational funds at Johns Hopkins University, Purdue University, the University of West Virginia, and the University of Oklahoma.

The Committee on Education of Gas Company Employees in the contact work with educational institutions has among its aims the improvement of public relations through lectures in colleges and schools, illustrating the practical application of the theories taught in the classroom.

In fact, who can say that the Committee on Rate Structure, which labors to promote a general appreciation of the necessity of such rate schedules as will afford the widest service, and the Committee on Rate Fundamentals, which seeks to correlate trends of thought which will more surely establish the financial stability of the units of the gas industry and their capacity to serve the people, are not doing real public relations work?

Newspaper, direct-mail, outdoor and radio advertising helps and suggestions and promotional publicity furnished by the Publicity and Advertising Section, the program of the Industrial Gas Section directing the attention of American industry to the advantages of gas as the prime industrial fuel; the household information service; the notable efforts towards cooperation with other lines of industry —all have their part in the picture.

The highest form of service to the public is shown in the operations of the Appliance Testing Laboratory which the Association owns and operates in the city of Cleveland. Through its tests, based on nationally recognized requirements, and the certification of compliance therewith, the Laboratory has immeasurably improved the safety of domestic gas-burning appliances, and as a result has brought about definite and demonstrable improvements in the service rendered to the public.

Training of sales employees so that they will recommend and sell to the customer the type and size of gas appliance that best suits his needs, is perhaps the most effective way of building better public relations from the angle of the sales department of the company, and accordingly, from the viewpoint of the Commercial and Industrial Gas Sections of the Association. The domestic salesman's training course devotes one complete unit and a considerable portion of the other five units to the problem of ascertaining the customer's needs. It is obvious that good public relations must be based primarily on the quality of the service rendered by the gas company, and this service cannot be satisfactory unless the appliances sold fulfill the needs of the customer. There is, of course, the obligation upon the company to tell the customer the facts about the service he is receiving, but the service itself must be the underlying basis for permanent public relations of the most desirable sort.

The manifold research activities of the American Gas Association, which have expanded so significantly in recent years, constitute another phase of the same general subject. In the industrial gas research field there are two aims; one, the ascertainment of fundamental scientific facts useful to

(Continued on page 509)

Sales Allies*

By Clifford E. Paige
President, American Gas Association

THE Gas Industry, on its own motion, never entered the appliance business. It was thrown into this business as a necessity for survival. Many of the gas companies in this country have been in operation for 75 years, some for a longer time. For the first 50 years of their existence, these gas companies showed little if any interest in the appliances which were used in the consumption of their product.

At all of the conventions of gas men prior to 1900, practically the entire program was devoted to discussion of problems of production and problems of distribution. In the last generation, this picture has changed greatly, with the result that at any meeting of gas men held nowadays the increasing of output is an important, if not the dominant, feature of the program.

It is not surprising that in the early days of gas appliances, no matter what line or for what purpose, the equipment was crude, inefficient, and unsatisfactory. The development of the electric light was the first great impetus for the Gas Industry to pay attention to the character and the utility of its appliances. Everyone knows how, in those days, the lighting equipment developed from the old flat flame burner to really beautiful household fixtures.

The gas business was engaged in a losing struggle, but it furnished a very good object lesson. With new adaptations for gas fuel coming into use, an awakened interest was felt in the quality of appliances offered for sale. Other fuel industries, beginning to feel the competition from gas, also began taking an interest in the appearance and utility of the appliances which they manufactured for the use of their products. This in turn spurred the Gas Industry to still greater efforts.

Even with all this incentive, however, for a great many years appliances, particularly for domestic service, were built only with an eye toward efficient operation and with no consideration of their attractiveness, either in design or color, and with no regard for the strength, stability, or need for subsequent maintenance. The progress of the art in building gas appliances is in line with the development in taste of all housewives, with the result that today practically all gas appliances offered for sale add materially to the appearance of the surroundings in which they are placed.

I repeat the Gas Industry did not go into the appliance business from choice and in a great many cases has not remained in it from choice. We are dealing here principally with appliances for domestic use. A Gas Company undertaking to do business in a community accepts a definite responsibility. It agrees tacitly that it must do all within its power to build up the community. It must operate on the basis that anything which is good for it must be good for the community and anything that is bad for the community cannot be good for the company.

One of its obligations is the development of its business. Its measure of growth is to a large extent its measure of prosperity; its measure of prosperity influences greatly its ability to furnish service; its service determines its sales and the greater the sales the lower the rate which the consumer enjoys.

As years have gone on and the business has developed, the gas company starting out with no appreciation of sales aids, no knowledge of good merchandising principles, has learned by association much of the elements which contribute toward successful operation. It still has much to learn. For instance, in the field of advertising, the American Gas Association, with all of its affiliations, has made a study of advertising, continuing almost through the Association's existence. While a national campaign in the matter of domestic appliances has not been undertaken, many companies have formed groups conducting what we call regional advertising. Manufacturers of appliances have done a wonderful work in assisting the gas industry, by their remarkable activity in the national advertising field. Even our competitors, with a keen appreciation of the value of good will, publicity, and direct advertising, have furnished a stimulus to this business. With all this activity, however, attention is still called to the fact that the direct expenditure for advertising in the gas business is a very much smaller percentage of the gross revenue of the business than is the case in almost all other activities.

The gas business has kept abreast of the times with respect to installment payment plans. By and large, it has constantly liberalized credit both with respect to the sale of the product and the sale of the appliances which use it. If a gas company is to increase its sales of gas and if increased sales of gas are to the best interests of the community, including the gas consumers, still further increases in advertising appropriations and still further opening up of credits will be necessary.

If a gas appliance after installation requires attention the consumer is no longer willing to await, sometimes for days, the service which he feels he has bought either with the appliance or with the product which he consumes. Years ago, such service to an individual consumer was measured in terms of days, now it is measured in terms of hours and, in many cases, often in terms of minutes.

The entire country is familiar with the splendid appearance of all domestic gas appliances now offered for sale, and certainly this industry in the development of its appliances has made a great contribution to the comfort and convenience of housekeeping and has added materially to the leisure enjoyed by housewives. Moreover, the appearance and efficiency of such equipment has made an appeal to that great army of people who have little time to keep house in the usual sense and who, therefore, desire attractive appliances which will perform their service

* Delivered before General Session, A. G. A. Convention, Atlantic City, N. J., Oct. 15, 1930.

quickly, economically, and with complete satisfaction.

In the development of all these appliances extensive and costly pioneering work has been necessary. Without the agency of the gas company, it is doubtful if any of the major lines of appliances would have come to be so universally used and indeed, in many cases, they would hardly have gotten a start against the tremendous competitive influences now operating.

For years, every phase of appliance merchandising and of building load has been discussed in committee and by papers presented before various gas associations. Perhaps the most recent and certainly an extremely important phase of new business activity is the utilization by gas companies of sales allies. I conceive "allies" to mean different interests joined together for mutual advantage. This subject is often discussed under the general heading of dealer cooperation. It is not a new matter with many gas companies; in fact, it has been a feature of convention programs for years. It is some of the newer aspects of it which I shall discuss.

There are differences in opinion with respect to all methods for developing the gas business. Gas men recognizing the weight of local conditions find it difficult to subscribe to a national standard which does not take into account the problem of an individual locality. This *is* a problem for which no panacea has been offered, nor is it likely there will be one. Generally speaking, any gas company would like to enlist the assistance of any allied business which could help that company forward. It may be trite to say that the gas company is interested primarily in the sale of gas and is interested in the sale of appliances only to the extent that it may develop the sale of gas. The fact remains. There may be cases where a gas company has developed a merchandising activity which transcends the importance of the gas business itself. If that is so, I have never heard of it. The gas industry went into the appliance business to retain its gas business and develop it.

The American Gas Association had to establish a laboratory to assure the sale of safe, economical, and satisfactory equipment. Before appliances were built to such exact standards as now exist, gas-using equipment was of a bargain-counter nature and the merchant, interested only in merchandising turnover, lost his interest on the delivery of the appliance. Complaints as to its operation were usually interpreted as due to poor gas or poor service supplied by the gas company.

As an extreme example of the gas company's problem, I quote an experience: You will remember that February, 1926, was one of the coldest winter months in years. During one particularly cold period, I passed a second-hand furniture store. On the sidewalk and in the windows were perhaps a hundred gas radiators. I did not see a single one of modern type in the entire display. All were rusty and all more or less battered. I was tempted to buy the whole lot and break them up, but I was deterred by the thought that if I did that with 50 or a 100 and the news got around, I would find my territory the dumping ground for all such appliances in the country and would find myself forced into the junk business. The American Gas Association and its membership have educated people away from the use of such equipment and have taught them to select appliances with care and discrimination.

We have been learning for years the value of building up public good will. In many cases, much of the good will which might be attained was spoiled by the antagonistic attitude of plumbers and other dealers who felt that their means of livelihood were being threatened by the increasing aggressiveness of gas company sales policies. Complaint has been made that in certain instances gas companies sought to drive local dealers out of business by offering all sorts of inducements with which no dealer could compete. One aspect of this complaint was that the gas company sold its appliances below cost and charged its losses to the gas consumers, with resulting penalty.

Gas companies have long since realized that cut-throat tactics in any part of their business could not long endure. We might venture to hope that our ethical condict is based on moral conviction; but assuming we have no morals, we might at least be credited with some business sense—and there would be none in any such policy.

Managers of two gas companies perhaps in adjoining territories might undertake a plan or program of cooperation with dealers in their respective localities, using identical details. One might succeed and the other fail. Why? If there are no differences in detail, it must analyze largely to personal differences.

It takes little imagination to see that such a result might occur, and to multiply this possibility through the number of companies in this country indicates that any national solution is almost beyond human accomplishment. There have been proponents of dealer cooperation in one form or another in our industry for a long time. Colonel Fogg made a decidedly constructive suggestion, in a paper read before the New England Gas Association, more than two years ago. Mr. A. J. Peters, at the Pittsburgh Regional Sales Conference, last winter, brought attention to the necessity for a consideration of the matter. A Committee of the Commercial Section of this Association deliberated on the subject, sought opinions from all parts of the country, and made valuable suggestions for the promotion of mutually satisfactory relations.

In recent months, there have appeared articles in trade journals distinctly criticizing the utilities, both gas and electric, for their merchandising activities. They have claimed that the utilities aim to drive the dealer and plumbers out of business. They have said that the activities of the utilities in the direction of appliance merchandising and installation constituted unfair competition, and was in restraint of trade. They have filed long bills of complaint against the utilities, mostly through their publications. They have claimed that they have approached utility associations, and have been given assurance of improvement in conditions, or at least of consideration of their views, but that no good ever came of it. They have claimed that plumbers and dealers are practically unanimous in their condemnation of utility practices in this regard.

and that bitter feeling toward utilities is national in character.

Their attitude comes as a shock and a surprise to many people interested in utilities, as operators or investors, or—in fact—as consumers. Utility managers, feeling that they are persons of probity and responsibility, conducting their businesses with entire regard for ethical principles, find it hard to believe that such an attack could be directed at them.

The fact should be remembered that where utilities are indifferent to sales of appliances, the other dealers have even less business. Where honest cooperation prevails, (and I mean honest on both sides) the dealers have far more business than when these natural allies are engaged in militant competition. Dealers may fill an existing demand, utilities must create it.

It has been said that possibly this feeling of dissatisfaction on the part of the dealers is a feature of the national economic disturbance now prevailing. While there may be a few cases of exception, it has been evident from the history of the Association and the Utility Industry that there exists no policy of destruction but there is a policy of building toward a better utility in a better community.

Gas men maintain that their attitude is based on the theory of "live and let live." With respect to price cutting methods and other unfair tactics, a survey indicates that utilities are doing the best they can to utilize sales outlets and to promote the welfare of dealers. This is not a generality. It is based on the findings of fact through the Association and through the splendid articles recently published over the signature of Mr. Floyd Parsons.

Petitions are being circulated throughout the country. Petitions which have been received bear a large number of signatures. They have come in from all parts of the country. Utility managers will be interested to know what circumstances caused these petitions to be signed in their particular localities. To give an idea of their scope and significance, I quote a letter received by the Association:

THE AMERICAN BUREAU OF COMMERCE

A National Organization Working in the Interest of the

INDEPENDENT BUSINESS MEN AND THE RATE-PAYERS of America

Lock Box No. 2964
CLEVELAND, OHIO

October 6, 1930.

The American Gas Association and
The National Electric Light Association,
420 Lexington Avenue,
New York City.

Dear Sirs:

We are enclosing, herewith, the signatures of 1,000 more business men who believe that merchandising by our public service corporations constitutes unfair competition, and that it is in restraint of trade.

We are enclosing, also, the petitions of three organizations, viz.:

The Stamford Chapter of Electragists, signed by its Secretary.

Local Union No. 91, Journeymen Plumbers and Steam Fitters of Birmingham, Ala., and bearing the signature of its President.

The Master Plumbers' Association of Boston and Vicinity, signed by its President and its Secretary.

The users of gas and/or electrical energy have been very generous in giving your utility members in nearly every community in the country, a monopoly in the sale of gas and/or electricity. These monopolies have been given for one reason and one reason only, viz.:—that the consumers might receive the best possible service at the lowest equitable rates by eliminating all of the costs of competition.

However, as many of your utility members have abused these special and profitable privileges, and have usurped the right to enter into activities beyond the control of State regulatory bodies, and have charged the costs of these unregulated activities, in whole or in part, as a cost of service to be paid for by consumers, and as long as State Commissions are unwilling or unable to compel correct accounting for rate making purposes, and so long as any legitimate merchant is forced to pay as part of his gas or electric bill, any part of the merchandising expenses of his strongest competitor, that legitimate merchant may be expected to seek relief through adequate Federal regulation of the utilities and their holding companies, or failing in that, the relief to be had through public ownership.

Yours very truly,

(Signed) A. B. WALTON,
President.

Unquestionably, there are many people signing these petitions who feel that they have a real grievance; and regrettably, there may be cases where indeed they have. Certainly the indictment cannot carry against all of the utilities and I am sure it is the belief of the majority here present that it could carry against none which they represent.

It is not a situation which can be met by hostility or by evasion. Much of the situation may be due to entirely local misunderstandings. The whole matter is a challenge to the utility industry. We must meet it,—perhaps locally and perhaps nationally. It is doubtful if any national prescription can be laid down which would be satisfactory to all parties on either side. We must urge upon each company member and each individual member of this Association the necessity for seeing that he makes no contribution to misunderstanding or doubt with respect to our attitude. Our business and our practices have been on too high a plane to require defense, but we should look upon this as an opportunity through which, by fair dealing, we advance the interests of the community, the dealers and ourselves.

In order that some definite accomplishment may come from these recent activities, it is suggested that a Committee from the Executive Board be appointed, who may draw upon the resources of the various sections of this Association, including the staff organization, to make a careful, impartial survey of the entire subject and report with recommendations to the Executive Board at as early a date as possible. It is suggested further that the Managing Director of the Association be requested to advise people from whom he has had inquiry on this subject regarding the action taken.

This is a matter of importance,—let us meet it fairly, frankly and fearlessly. Let us continue to uphold the doctrine which has been for so long a guiding principle:—The Utility will meet any proposition anywhere, any time, a little better than half way.

By mutual confidence and mutual aid
Great deeds are done, and great discoveries made.
(Quoted from Pope's Translation of Homer's Iliad.)

Gas Course at Rutgers

The Committee on Education of Gas Company Employees has for some time sensed a need for a home study course which will teach the elements of gas production, distribution and utilization without going deeply into the sciences involved. The Course now offered by Rutgers University and endorsed by the American Gas Association supplies this need. It is especially suited for the non-technical employees of gas companies who should have a general knowledge of how gas is made, how it is delivered to the customers and how it is used. The course is commended to your consideration.

N. C. Miller

By N. C. Miller

Rutgers University Extension Division

THE progressive employee, in any line, after he has mastered the "how" of his immediate job, begins to speculate on the "why" of its various details. Especially is this so in an industry like the manufacture of gas where many of the processes are more or less concealed, or the subject of chemical reactions not always understood. Having grasped the "why" of his particular job, the worker, of any grade, who wishes to get on, tries to master the "how" and the "why" of adjacent operations as well.

It is rarely practicable for most men, busy at their daily tasks, to obtain this knowledge by observation. Especially is this so when the operation is at some distance or perhaps in an entirely different plant or division. They can get this information only through study.

Books are not always available to the worker, nor up-to-date. Nor do they always cover the details of his own company's processes. Worse still, they are usually too technical for the ordinary man. Hence the demand for this information in easily digested form. Recent developments have made available a regular home study course exactly meeting the needs of the gas industry.

A course in the Manufacture, Distribution and Utilization of Gas which has the full approval of the American Gas Association has been prepared under the direction of the University Extension Division of Rutgers University—the State University of New Jersey. The course has been designed for foremen and all classes of skilled and semi-skilled employees either in the manufacturing, distribution, commercial or new-business divisions of a gas utility.

The actual writing of the subject matter of the course, which is in two parts, was done by C. E. Reinicker, assistant to vice-president of The United Gas Improvement Company of Philadelphia.

In the preparation of the text material, Mr. Reinicker had the valuable suggestions and criticisms of R. B. Harper, vice-president, E. F. Pohlmann and S. J. Modzikowski, of the Peoples Gas Light and Coke Company, Chicago; F. A. Lydecker, general superintendent of distribution, gas department, Public Service Electric and Gas Company, Newark, and A. M. Boyd, of the Philadelphia Electric Company. Especial credit is due to J. V. Postles, assistant to the vice-president, The Philadelphia Gas Works Company, without whose assistance the preparation of the course would not have been possible.

The work was undertaken in answer to the persistent demand for an authoritative, yet fairly brief treatment of the subject, which could be made available to the rank and file employees of the gas companies affiliated with the American Gas Association.

While fairly comprehensive, covering everything that could be put on paper of value to the gas company employees, whether engaged in manufacture or distribution or in making the public familiar with the uses of gas, it had to be almost free of technicalities. This requirement has been met and the information is given in clear, non-technical language insofar as it has been possible to dispense with technical terms. When they are used, they are carefully explained.

While the fundamentals of chemistry and physics underlying the manufacture and distribution of gas, the course requires little detailed knowledge of those subjects and that minimum of knowledge has been incorporated in the text as it proceeds. The average employee of ordinary schooling should be able to pursue the study successfully to its conclusion within a reasonable time.

The course will be administered through correspondence, entailing no classroom attendance, the study being carried on in the worker's spare time. Questions are placed at the end of each "section." A section is a complete unit, forming the basis for the written lesson report which goes to the University for correction and grading. The questions also serve to point out the "high spots" in the section and assist in its study.

The earlier units of the course are mainly descriptive and contain general information; those following give details of actual processes and the operation of the various devices used about a gas generating and distributing plant.

The topics treated in the course are covered in 23 separate sections. Part One of the course opens with an interesting outline of the early history of the Gas Industry, beginning with William Murdock's light-

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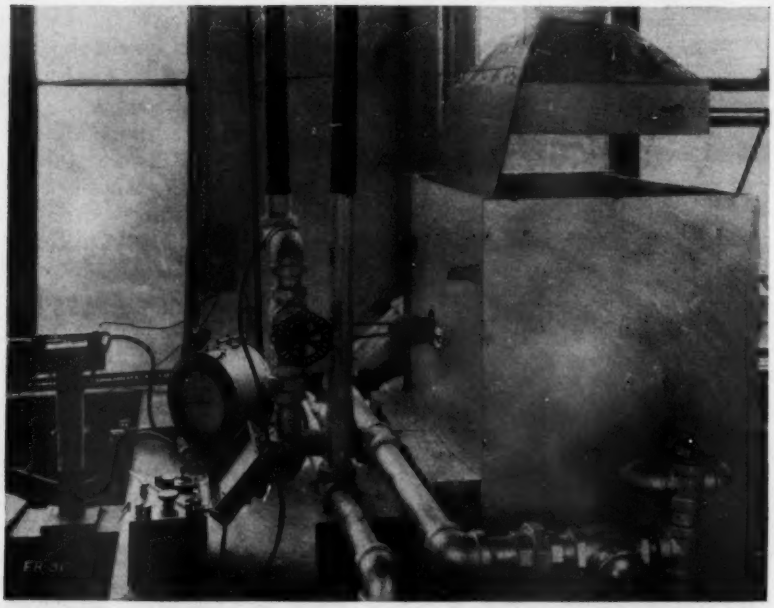


Fig. 1. Experimental gas furnace in which it is possible to control the atmosphere, velocity of gas flow, pressure and temperature

WITH the idea of preparing gas to provide for the future needs of the forging industry, the Committee on Industrial Gas Research of American Gas Association has been carrying on a two-fold scientific investigation, the ultimate purpose of which is to develop a forging furnace superior to those types now commonly in use which shall employ gas as a fuel. The investigation of the theoretical aspects of the problem was to be conducted in the laboratories of the University of Michigan, while the furnaces themselves were to be developed by the Surface Combustion Company of Toledo. The present brief article is intended to give some idea of the lines along which the investigations at the University of Michigan were conducted.

The research upon this project is not yet completed, but the results thus far obtained indicate that gas has many favorable characteristics. Although the original cost for gas fuel in most localities may be higher than that of oil, yet the intelligent use of gas fuel should result in economies in the process of forging which would lower the ultimate cost, and produce forgings of higher quality.

The total cost of forge heating must, however, be given careful consideration if gas fuel is to be successfully introduced into the process of forge heating. There are many items of cost in the forge shop which are more dependent upon the manner of heating than is usually appreciated. These items include refractory costs, costs for the labor of removing scale before forging, losses due to necessary scrapping of parts when scaling has resulted in wrong dimensions of parts, or losses due to burning, or to the failure of machine units when burned steel has not been previously detected. The most important consideration in estimating the costs of forging is the effect which the ease of working the metal has upon the rate of production. The tests at the University of Michigan would seem to indicate that the forging is most easily accomplished by the proper use of gas fuel. To appreciate fully the extent to which the ultimate costs may be reduced by increasing the rate of production, it would be well to consider the actual costs recently given by one of the larger forge shops. These are as follows:

	Per Hr.	*% of Total*
Fixed Charge Against Unit of One Furnace, One Hammer and Forging Dies	$3.75	61
Labor Cost for Forgeman	1.25	20
Labor Cost for Heater	.90	15
Cost for Fuel	.25	4
Total	$6.15	100

In estimating the cost of a forging, this total is divided by the number which can be forged per hour. To this cost will, of course, be added the cost of the steel.

It will be observed that the fuel cost is very low compared to other costs, representing only 4 per cent of the total. If by means of greater ease of forging, the rate of production can be increased 10 per cent, there will be a saving per hour of 61.5 cents. This means that the fuel cost could be more than tripled without increasing the total cost. If this increase in production can be accomplished by the use of the cleaner, more convenient gas fuel and the forgings produced can be made uniform without danger from burning, it would seem that this fuel ought to be used. The present research has led us to expect that gas will prove the ideal fuel by accomplishing this result.

At the beginning of this research the attitude of the average drop-forge executive was not at all favorable to the use of gas. He felt that since all he wanted was heat in the metal he was forging, the cheapest source of heat was, therefore, the best. He did not believe that he needed any temperature control other than could be obtained through the use of his eye. He gave practically no consideration to atmosphere control. The matter of decreasing the scale formed on his steel did not seem important to him and he

Research on Forge Heating

At The University of Michigan

By [illegible]MINY, American Gas Association Research Investigator, University of Michigan

accepted his high refractory costs as an unfortunate necessity. If he had been correct in his view of the case, the possibilities for gas would have been very bad indeed. Its use would then probably be limited to those few small installations where the convenience of gas is the deciding factor.

The first step in the investigation was to ascertain if this view of the forge executive were entirely correct. Tests were made to study the effect of forging practice on the ultimate qualities of the finished part made from the forging and on the costs of fabrication following the forging. Important factors affecting the heating of forgings were found, which indicate that fuel cost is far from being the only determining factor affecting the cost of forge heating. The tests showed that both the quality of the finished part and the cost of fabrication following the forging are very vitally affected by the method of forge heating. The tests indicated that it is possible to ruin a forging while it is in the heating furnace and that the injury may be entirely on the inside so that no type of plant inspection can discover it and it remains undiscovered until the part fails in service. This injury was found to result from the effect of the atmosphere in the heating furnace and its temperature. It is, therefore, apparent that control of both atmosphere and temperature are highly desirable in a forge furnace.

The injury that results from wrong atmosphere and high temperature is called burning. Whenever steel is burned, it becomes excessively coarse-grained and brittle, and its properties resemble those of cast-iron. This phenomenon has always been troublesome to forgemen but they have accepted it as a necessary evil that resulted from forging at too high a temperature. Just what was meant by too high a temperature was a matter of uncertainty. Further, since all plants produced some burned forgings, this difficulty was accepted as something to be occasionally expected. It remained for this research on the forging program to show that the same steel might burn at different temperatures, depending upon the atmosphere of the furnace in which it was heated.

Some further surprising effects of atmosphere were noted. It was found that at forging temperatures under certain conditions steel might become hotter than the furnace atmosphere in which it was heated. This unexpected behavior of the steel may be explained by the fact that the oxidation of steel is accompanied by a liberation of heat. When this oxidation occurs rapidly enough, heat is liberated on the steel surface at a faster rate than it is carried away by the surrounding atmosphere so that the steel becomes hotter than the furnace atmosphere.

This phenomenon occurs only in an atmosphere containing free oxygen; the more free oxygen, the lower the temperature at which it occurs. In an oil-fired furnace, where the free oxygen content is usually quite large and the variations great, conditions are precisely right to make the steel hotter at certain points than the furnace atmosphere. This fact and the fact that a steel burns at a lower temperature in an oxidizing than in a reducing atmosphere give gas a decided advantage over oil at forging temperatures. These

Fig. 2. X-ray equipment used in studying burned steel

findings have been published with so much supporting data that they have been generally accepted by the metallurgical profession. They had, however, to be established by tests made under very carefully controlled conditions and with close attention to details of experimentation.

Several furnaces were used in these tests, an electric furnace, two open-fired gas furnaces, and a muffle gas furnace. The muffle gas furnace, a picture of which is shown in Figure 1, was used for the most exact tests. In this furnace it is possible to control the temperature to within 5° F., which is within the limit of accuracy of the platinum, platinum-rhodium thermocouple used for measuring its temperature. It is also possible to produce any kind of atmosphere that is desirable. Furthermore, in this furnace variations in pressure and rate of flow of the gases can be produced and measured. With such temperature and atmosphere control, it was possible to know the actual conditions surrounding the heating of each of the many test samples.

The forgemen who did the forging on the test samples were quite often surprised at the ease with which the steel forged when properly heated. The practical forgeman knows that medium-carbon steel is more difficult to forge than low-carbon because it is harder, stiffer, and less ductile. However, when properly heated in our special furnace, the medium-carbon steel forged so easily that it was often mistaken by the forgemen for the low-carbon steel. It is recognized that, of course, it may be some time before a commercial gas-fired furnace can be built which will give the accuracy of control attained in this experimental furnace, but if furnaces can be built to approach this accuracy of control, they are bound to be popular with the forgemen, who are always most concerned with the ease of the forging of their steel. It is the belief of the investigators in this research that such a furnace is quite practical, and can be developed.

In studying burning of steel a great many tests had to be made which are of primary importance in the research but which are of only passive interest to the gas engineer. The microscopic examinations, the hardness and tensile tests, and the electrical and magnetic tests are a recognized part of the technique of the investigator. One of the methods of test, however, the use of the X-ray, is so new as to be of special interest. By means of the X-ray it has been found to be possible to detect steel burned entirely on the inside of the forging. It was also found that, if such a steel forging is not cut open but is further forged at a proper temperature, the burned steel may then be rewelded so that no evidence of burning is left. The X-ray equipment which has been newly installed at the University is shown in Figure 2. It is the most modern type of equipment developed for this work. It is capable of taking a radiograph of steel samples up to 4 inches in thickness. The X-ray tube will stand 230,000 volts so that a steel sample four inches thick can be photographed by about one hour's exposure. The entire equipment shown in the picture is in a room lined with sheet lead one-fourth inch thick. This is necessary to protect the operator outside the room during exposure since even short exposure of the human body to the radiation given off by this tube is dangerous.

As has been said, at the beginning of this research the opinion of the average drop forgeman had been that he needed heat in his metal but that there was no need for pyrometric control of the heat, much less control of the furnace atmosphere. It is not to be expected that the forge industry in general will at once change its views on the subject, but a number of the more progressive shops have shown themselves receptive to ideas on improved heating and have already changed to methods of temperature control.

The studies of burning have been only one part of the research. Other phases of the program which have been and are being investigated are, the effect of the rate of heating of the forging, the effect of overheating, and the quantity of scaling and its effect on the forging. Scaling has been found to be especially important and to have a decided effect on the quality and cost of the finished forging. The technical articles on the results of the investigation of these subjects have so far been published by the Committee on Industrial Gas Research largely for the consideration of highly technical metallurgists. It is now planned to publish the facts for the benefit of foremen and superintendents engaged in the production of forgings. Articles on these subjects will probably not appear in the gas journals since they are of interest only to a comparatively small group in the gas industry, namely, the specialized industrial gas representatives. They will be published in journals devoted to the fabrication of steel since it is important that those in the forging industry be appraised of these facts. When the full significance of these findings is appreciated, controlled heating is bound to become one of the important developments in forging practice.

Convention Calendar

The Public Utilities Association of Virginia,
Cavalier Hotel, Virginia Beach, Va.
November 13 and 14.

National Association of Railroad and Utility Commissioners,
Charleston, S. C.
November 12 to 15.

Utility Association Secretaries Conference,
Statler Hotel, Cleveland, Ohio.
December 1 and 2.

A. G. A. Southwest Regional Sales Conference,
Adolphus Hotel, Dallas, Texas.
November 13 and 14.

1931

New England Gas Association,
Boston, Mass.
February 3, 4, and 5.

Chamber of Commerce of United States,
Washington, D. C.
April 28 to May 1.

A. G. A. Natural Gas Department,
Memphis, Tenn.
May.

Canadian Gas Association,
Montreal, Quebec.
June 4 and 5.

Southern Gas Association,
Chattanooga, Tenn.
June 9, 10 and 11.

National Electric Light Association,
Atlantic City, N. J.
June 8 to 12.

Pacific Coast Gas Association,
San Francisco, Calif.
September.

American Gas Association,
Atlantic City, N. J.
October 12 to 16.

Future of the Gas Industry*

Samuel Insull

By Samuel Insull

WHAT occurs to me is that it's a very remarkable thing and a great evidence of the virility of our industry to have such a large convention now with representations of our companies throughout the country on this occasion.

We are in a year of decided depression in industry. When that depression started, many of us had our serious doubts as to how the utilities, the gas industry and the electric industry, would be able to take care of themselves. The changed conditions of the gas business during the last 10 years, evidences so much by what we have been listening to this morning in relation to rates, effected in the minds of a good many of us the question of the point to which the saturation, the point of saturation that business has arrived at and we wondered whether our business would be affected to the extent that the steam railroad business is affected in the times of depression and other industries.

I think we have had enough experience, taking the latter end of the last year and the first nine months of this year to show us that the policy adopted during the last five to ten years of a broader basis of rate making has greately assisted us during the period of depression. We have had no such tremendous slump as had been experienced in previous depressions and those companies who saw the trouble coming and who have paid attention to the reduction of expenses, have found that notwithstanding a slight reduction in output, they are able to make a reasonably good showing for themselves.

There has not been much opportunity to reduce expenses in the gas business, electric business or other forms of public utilities since practically before the great war. We had one period when it was possible to make some effort in that direction, but the accumulation of wealth has been so rapid during the last fifteen years and the expenditures of our people have been so great that up to the time of the stock exchange panic of November of last year, little or no effort could possibly be made to reduce operating expenses of utilities because you cannot influence your people in that direction at the time when the country has gone wild on extravagant expenditures of living and luxury.

Now, we have had a number of months of relatively hard times. It is very unpleasant for all of us. But if there is any message that I would like to convey to you representatives of the gas industry, it is the message that in times like these, it is possible for us to put our house in order so that when the improvement in business comes, we will be able to take full advantage of it. I do not mean that it is necessary to make wholesale reductions in costs, but I do think it is necessary to cut off some of the frills of business, some of the things parallel to the individual extravagances you indulge in —when you all feel rich and that you abstain from when you all feel poor.

I think there are great prospects for the future of our business. We have problems to meet just as our predecessors have had problems to meet. I can remember that when I first entered the electrical business, half a century ago, the great problem seen by gas manufacturers then was that they thought their business was going to be wiped out by the electric industry for lighting and other purposes. But they got over that.

Our latest problem is the use of natural gas. There are very large quantities of natural gas in this country, and the prospectors have not gotten through yet. That is just one of the problems that we have got to meet and I have not any doubt but that the same intelligence will be devoted to the meeting of that problem as has been devoted to the meeting of other problems in the gas business.

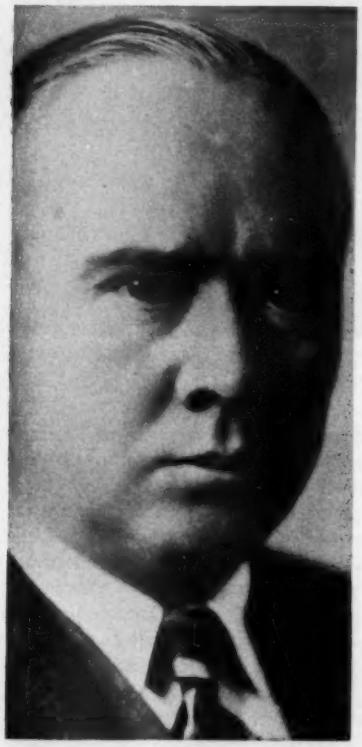
You have the proud distinction of being almost the senior local public utility. Water, the distribution of water and collection of sewage are the only two local functions besides the protection of property and the enforcement of the observance of law and order among the functions of local communities.

The gas business has weathered all the changes of inventions within its own industry and outside of it. I think all it needs at this time is that we should look ahead, that in a time when necessarily materials are cheap, we should not be afraid to make extensions and investments in plants on which we will get a return just as soon as business turns. And we should bear in mind that although the present depression is world-wide, it is our good fortune to be in a country of

(Continued on page 514)

*Delivered before General Session, A. G. A. Convention, Atlantic City, N. J., Oct. 16, 1930.

Selling Gas Against Modern Competition*



Wm. H. Hodge

By WILLIAM H. HODGE
Vice-Chairman, Publicity and Advertising Section, American Gas Association

THREE weeks ago I addressed a strictly electric meeting on the subject of "Selling." In that undertaking I professed great sympathy with and solicitude for the electric light and power industry. Today, as I face this audience, composed of men and women whose future is bound up in the future of the gas business, I am at least equally and sincerely concerned with the progress of gas.

I am reminded of one of the popular stories of James Milburn Bennett, as applicable to my appearance on this platform.

Jim admits the story is a trifle old, in fact says he heard it when he was a boy. It relates to a beggar, sitting on the curbstone in Philadelphia and supporting the sign "I am Blind." A passerby attempted to drop a nickel in his tin cup, but the nickel missed the cup and rolled into the gutter. Whereupon the beggar arose, grabbed the nickel and put it where it belonged. I thought you were blind, remarked the indignant philanthropist. The beggar glanced at his sign. "Oh, that's all right," said he. "They just got the wrong sign on me. I'm Deaf and Dumb."

When I get through here many of you may think I am blind to certain facts as you understand them, and as many or more may heartily wish that I were deaf and dumb.

Competition in selling gas today is severe and perplexing. Everything considered it probably requires more resourcefulness to meet than when the electric light began to supersede the gas light. Despite this situation, if it is true, I believe that the gas industry not only can maintain its prosperity but can greatly accelerate its present rate of progress. Sharper competition should be a help, not a detriment to the future of the gas industry.

Here are the principal sources of competition challenging the gas business today:

1. Progress of electric cooking, both domestic and commercial, water heating and refrigeration.
2. Progress of electricity in industrial heating operations.
3. Liquefied gases in industrial applications.
4. Improved efficiencies in oil burning house heating equipment and decreasing prices of fuel oil.
5. Improvement in coal burning heating apparatus, and organized advertising and sales effort by coal dealers.
6. Public preferences or demands which have no affinity with cooking and heating.
7. Continued failure of many combination gas and electric companies to aggressively develop the gas business on a parity with efforts to develop the electric business.

These seven chief competitive sources apply principally to manufactured gas but some actually or potentially also affect the natural gas branches of the industry in more or less degree. No attempt has been made to list them in their order of relative importance. They all exist as stubborn facts.

Let us take these seven competitive points and discuss them briefly from the sales point of view.

The cooking load is said to represent about one-half of the total business of the manufactured gas industry. Domestic water heating is a considerable percentage. Gas refrigeration, while growing, has not yet reached sizeable proportions. The main threat to gas cooking and water heating comes from electricity.

It is estimated that there are 15,000,000 gas ranges in use in the United States. This shows the wonderful popularity of gas in the kitchen. There have been something like 1,000,000 electric ranges sold in this country to date. This proves that electric cooking is practicable and saleable.

In 1925 the electric ranges sold during the year amounted to 85,000. The figure had grown to 160,000 for 1928. For 1930 the estimate is 180,000. Why this growth, some part of it at the expense of the gas industry.

Electric ranges have been improved in efficiency and reduced in cost; electric cooking rates have been lowered, but these are not the chief cause of the gain in electric cooking. Gas with modern ranges performs every cooking operation as well or better than electricity, is clean and fully as convenient, is faster and more flexible than electricity and costs much less to install and operate.

Electric cooking gains because of determined and expensive sales and

* Delivered before General Session, A. G. A. Convention, Atlantic City, N. J., Oct. 15, 1930.

advertising effort. Up to recently, electric ranges were sold principally when gas mains did not exist, but now they are encroaching in gas-served territories. The competitive dangers are well set out in a recent range resolution adopted by the executive committee of the American Gas Association, at the request of the commercial section. The way to overcome this competition is ably set forth in the same resolution. It calls for a sustained program of superior sales promotion, including the expenditure of more money for advertising and the highest grade sales personnel. Modern sales methods, as a matter of course, include sensible and economical market research and analysis.

Point No. 2, "Progress of electricity in industrial heating operation," is largely a technical subject. It must be handled by engineers imbued with fighting sales spirit. There is no economic reason why the splendid progress of manufactured gas in many forms of industrial applications, 1929 showed an increase of about 10 per cent, should not continue if backed by scientific rate schedules, the enthusiastic support of management, continuous research and the extremely important matter of prompt and expert servicing. For natural gas the industrial field is particularly large and attractive, with the advantage in favor of gas.

Turning to Point No. 3, we realize that liquefied gas in the form of butane has become a serious competitor of manufactured gas for industrial uses. Here again properly designed rate schedules are important to hold and obtain business. In the form of propane, and sold as various bottled gases in suburban and rural territories, liquid gas is not a competitor and is serving as the advance agent for ultimate city, or central station gas service, wherever there is a possibility that the latter can some time be rendered. These gases, their development and utilization are scheduled for specialized attention on our program. The subject is one of vital, possibly revolutionary, interest to the industry.

Developments in the petroleum industry have created an enormous potential production of highly concentrated, easily transported and low-priced gas in liquid form, suitable for heating purposes. It can be distributed in tanks or pipes, either as a gas or a liquid. It is inaugurating gas service in very small communities, which have not had gas previously, and replacing various kinds of manufactured gas in other small places. Up to the present it cannot compete on a price basis with natural gas for domestic, commercial and industrial purposes, or with manufactured gas for domestic purposes in and near communities of substantial size.

Gas companies are the existing and best economically situated retailers of gas for domestic, commercial and industrial purposes. It has been suggested that they should properly become the distributors of liquid gases as well as becoming consumers of these materials in gas manufacturing and other processes. This would not mean monopoly because the field would still be open to other distributors with a vast quantity of raw materials to draw upon. Consideration is being given to this proposal by a number of gas companies. Some companies are already in the butane gas business and have built distributing pipe systems in small towns. Others are using butane to enrich manufactured gas.

Points Nos. 4 and 5 may be considered together. They relate to competition in house heating by oil and coal. In this field we have a fuel in gas that is the finest and cleanest agent economically obtainable; it also costs the most, as a rule, but where natural gas is adequate in quantity and very low in price it is almost universally used. Manufactured gas has made steady and commendable progress. In 1927 it was estimated that there were 42,000 homes heated by manufactured gas in the United States; in 1928 the number had grown to 77,000. In three years the consumption of manufactured gas for house heating nearly doubled.

Oil heating is being improved by added efficiencies in furnace equipment and lowered in cost by cheaper fuel oil prices. Mechanical stokers have considerably lowered the cost of solid fuel heating by enabling the utilization of cheaper grades of coal and reducing labor, and the same improvements have reduced ashes, dirt, smoke and soot. The coal people in larger cities have organized and are presenting effective modern advertising, featuring the cost differential as against both oil and gas, and stressing modern equipment. The oil people are continuing their aggressive advertising. Equipment prices are less than before.

Anything approaching satisfactory growth of gas house heating demands the most alert, forceful and intelligent sales effort which we can bring to bear.

Personally I think that competitive source No. 6—"Public preferences or demands which have no affinity with cooking and heating," or what might be termed indirect competition, is the most easily overcome of the lot. I believe this, first because if a family wants to live, sleep and eat, in a home it *must* in all but a small portion of this country have heat in winter, and everywhere fuel to cook with, and more or less hot water. These things are basic in normal domestic life. They are indispensable. Books, music, games, automobiles, airplanes, nor any other natural or synthetic product can take their place.

The home instinct is inbred. Temporary habits of eating and living can have no broad permanent effect upon it. If you do not believe it, ask the sons and daughters of the delicatessen-minded mother, and the hotel-bound father.

Second, in ministering to the necessities of bodily warmth, nourishment and cleanliness, the problem of properly equipping people with gas-consuming appliances is comparatively simple. The answer is found in devoting attention to the *direct* forms of competition already discussed, and in adjusting sales and advertising efforts to the contemporary style and tempo. Appliance manufacturers can be trusted to improve and adorn their products to suit popular fancies and style trends, as they have done very cleverly during the past few years.

But many gas companies have not been nearly as alert in stepping up

their sales and advertising plans as they should have been. Such policies for the most part have been ultra-conservative. They have been backward in spending sufficient money for new business development—in employing brains, energy and man power in adequate volume to get maximum returns.

I do not minimize the importance of countervailing demands and tendencies on the part of the customer, but I say that the remedy is simple—not necessarily easy. There is no mystery about effective advertising and sales functions, but they require money to put them into successful operation. It gets down to a question of executive decision, backed by confidence and cash. You may intelligently spend sufficient money in this way to keep and improve your position in the business world, or you have the opposite choice of slipping backwards.

In taking issue with a considerable number of erudite sales and advertising experts, I am again reminded of a story, this one told by my genial friend E. Frank Gardiner.

It seems that Mr. Gardiner recently met an acquaintance in his home town of Chicago who was rather the worse for wear. He—not Mr. Gardiner—was on crutches, a hand was bandaged and he had a large patch over one eye. "What happened to you?" queried Mr. Gardiner. "Well, I'll tell you," replied his friend. "It's quite a story. I went to a poker game the other night and everybody got drunk but me. So I went home about one o'clock and went to my room and started to undress. Just as I was taking off my collar I heard a noise. I looked around, and what do you suppose I saw? Why a funny little man, about knee high, with a red coat on and a big sword. 'What are you doing here?' I said, 'get right out of my room.' The little man didn't say a word—just clapped his hands twice, like that—and then what do you suppose happened? Why 154 other little men, with red coats and swords, marched right into the room. Well, I'm no fool. They had me outnumbered. I used my head. I jumped out of the window."

A few years ago we began to read and hear a lot about something called "the new competition." We were told that the selling problem had shaped itself into a struggle of industry against industry, instead of a contest between two or more similar products which do about the same thing.

Hence, figuratively, the bakers were encouraged to get together and fight the butchers, the butchers were pitted against the florists, the florists were supposed to waylay the paint people, and the paint people were supposed to get the scalp of the bathtub makers; cigarettes fought a titanic battle with sugar, a big scrap was waged between the orange and the banana, while everybody was incited to gang warfare on automobiles, radios and premature golf courses.

Notwithstanding the fact that the fundamentals of this kind of competition are as old and certain as civilization and trade, the general idea was blown up to astounding proportions by the same school of writers and economists who talked so much up to a year ago about the "new era" in finance and industry. All the word painting did not spoil the historical fact that grandmother had the same—perhaps greater—difficulty choosing between a new organ, a new buggy, a new carpet, a new cookstove, or a new dress, as her granddaughter has in stretching the family income as between a new radio, a new automobile, a new gas range or a fur coat. The only difference at bottom is the fact that today—or was it yesterday—we have more dollars on one hand and more ways to spend them, plus a credit system that the ancients would have thought impossible, on the other.

I have no quarrel with the facts, but this line of thinking distracts from the main issue, which is straight out direct competition with other fuels.

And out of the stupendous production of words on this theme emerged a dangerous, deceitful and destructive phrase, to wit: "The fight for the consumer's dollar." There are few pieces of rhetoric better designed to incite the plain people to fury, more nearly perfectly contrived to excite antagonism to so-called big business—no phrase to stronger support the idea that in this country commercialism has become a Frankenstein turned loose on a helpless public—than this blood-thirsty, oft-repeated slogan.

At best the phrase and all it suggests are illusive. It does not really mean what it seems to mean to the layman. Constructive and lasting industries are built on *conserving* the consumer's dollar, that is to say, giving him greater value for his money when spent for utilitarian purposes, higher efficiency when spent for productive purposes, greater pleasure when spent for recreation and entertainment, sounder ideals when spent for culture.

The really constructive, permanent industries, of which the gas industry is a conspicuous example, have in reality worked for the conservation or multiplication of the consumer's dollar in the way I have indicated. They have improved their products, developed new uses for their products, distributed them to more people over wider areas; have advertised and sold aggressively but sanely. They have thus created more business volume for themselves which enabled improved load factors on the investment and lower prices to the public.

In this so-called "new era" it appears to be the pennies and nickels that are now in demand; more as in the old imperfect days when the consumer actually counted up his change before he purchased or signed an installment contract. On this basis the gas industry, because it actually does conserve the consumer's dollar, should profit as never before.

Turning to article No. 7 in my seven competitive sources I think it deserves fully as much attention as any of the others. This reads a "Continued failure of many combination gas and electric companies to aggressively develop the gas business on a parity with efforts to develop the electric business."

There is little to be gained in presenting convention papers in which things are guardedly hinted that should have frank, outspoken discussion. Men prominent in the industry have already pointed out that

in combination gas and electric companies gas development and earnings often fall short of the results accomplished by well-conducted companies interested in gas alone.

It has been shown, by analyzing representative groups, that while operating and other economies are undoubtedly secured by combination management, net earnings on the investment in gas properties are frequently considerably less than a fair return. To the contrary, exclusively operated gas companies, at least in average situations, are represented as earning something like the full return regarded as reasonable by commissions and public opinion. There are exceptions, of course, in both classes, but as a rule it is believed that these statements fairly indicate the conditions in at least a part of the industry.

Here we find a source of competition provided by ourselves. Therefore, we ought to be able to control and master it.

One deduction is plain. Either some combination managements are not performing their full duty or it is impossible for them to do so by the very nature of a hook-up of gas and electricity. Were it not for the fact that there are notable exceptions, wherein the gas part of the business is on an equality with the electric in net returns, there would be ground for the opinion that it is a case in which no management can serve two masters—That is, an inherent impossibility for which management cannot be blamed.

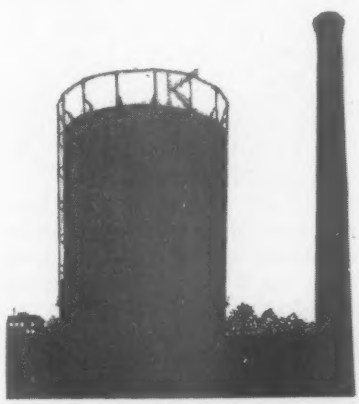
Whatever the cause, I know that in some combination companies the gas business has been unfairly treated. It is true that in most of such cases a certain measure of protection is accorded gas by not pushing electric cooking and water heating in gas territory. To offset this, however, such situations often practice a negative policy in gas development. Sales efforts lack volume, adequate preparation, punch and continuity. Electric appliances receive preferential usage in floor and window displays and advertising. A disproportionate amount of brain and man power is put back of gas. In close decisions electricity usually is the winner.

The effect of such a policy on employee morale is certain. If the general manager does not care much about gas development neither does the sales manager, and so on through the sales department and to all the other departments, until as few employees as possible think as little about gas as possible. They look for reward and advancement in other directions.

There are two kinds of medicine for competition No. 7. The most drastic prescription is to separate entirely gas from electric operations—to have two distinct companies where there was one before. The other is for dual management to so organize sales and advertising departments, and to so cultivate enthusiastic employee interest, that gas gets a square deal. The exceptions I have spoken of prove that dual management *can* properly develop the gas business if it is so disposed and possesses the necessarily high degree of ability.

Management must solve the problem or complete separation of the two branches of the business can hardly fail to take place generally. The trial period may not exist forever.

Depressed times always bring out certain dubious wise-cracks concerning the difference between the pessimist and the optimist. The last one I heard is to the effect that a pessimist is one who sees a disadvantage in every opportunity, while the optimist sees an opportunity in every disadvantage. Maybe we have to endure these smart sayings to help get the factories whirring again.



Several days ago I heard of a gas company serving a small place in the middle west whose executives evidently saw the opportunity. They decided to quit worrying about who got the consumer's dollar and studying national graphs and statistics, spend a little money and add a few customers. They served less than a thousand meters, and the rate of growth for some time had been three or four new customers a year.

So under the supervision of a specialized organization they had a careful survey made, organized a campaign with plenty of advertising, worked out an attractive, but sound offer, put two experienced men in the field and in a few weeks signed up approximately 100 new customers. Times were hard in this town, industries on part time, plenty of people out of work, but there was business to be had just the same.

I wish to conclude with a quotation from a Chicago *Tribune* editorial which commented with approval on President Hoover's recent speech to the American Bankers Association. It expresses what I have in mind in more effective words than I can command. Here it is:

"What is needed first and most is the revival of the American spirit of advance, the revival of confidence in the realities of our strength. The true American spirit is daring and aggressive. The trouble with us now is cold feet. We have stopped going after what we want and are waiting for it to come to us. American enterprise should get itself out of the doldrums and stop whistling for the wind. It has in its control the world's greatest market. It has its own resourcefulness and ability. It has one of the greatest opportunities of its history, and only moral weakness holds it back.

"We are not trying to restore courage and common sense by talk. There is too much talk. What is wanted is action, the courageous business enterprise which has been the proud and just boast of American business in the past and should be today."

Cooperation of Extension Departments and Home Service*

By FLORENCE L. HALL,
Extension Home Economist, U. S. Department of Agriculture, Washington, D. C.

THE Smith-Lever Act, passed by Congress in 1914, provided for extension work in agriculture and home economics with rural people. We now have approximately 6,000 workers in the extension field working with men and women, boys and girls. Included in this number are approximately 1,700 home demonstration people of whom 1350 are county Home Demonstration Agents. These trained women work among farm and village home makers along the lines of foods, clothing, child care and training, and home management which includes the wise use of money, time, and energy. As you readily see, this is a broad program. The underlying purpose of the work is better farm homes, which includes bringing into the farm home in greater measure, health, convenience, comfort, and beauty.

The program of the home service worker and the home demonstration agent has many similar points. For instance, in the matter of food and nutrition your interest is similar to ours in helping the home makers to plan, prepare, and serve food that is attractive, appetizing, and nutritious. To help her to do this in an efficient manner at the least possible cost, using food which will insure growth and maintenance of health, is an ever present problem with your workers as well as ours. To aid the young mother in menu planning is another phase of the work so that menus may be adapted and suitable food be provided for the young children to avoid preparing entirely different sets of food for the same meal.

Extension workers, like yourselves, are ever on the alert to interest greater numbers of women in good food practices. Sometimes a catchy title will attract attention. When a project is designated "The Value of Fruits and Vegetables in the Diet," it does not appeal greatly to the imagination. How much more intriguing is the title "Meals that Please, Prepared with Ease," which is the title of a food project taught by the Extension Service in New York. New Hampshire, in an effort to meet the needs of the busy farm woman, planned a project which was called "The One Dish Meal"—the purpose being to help the home maker save time and labor with use of casseroles, to introduce more vegetables into the diet, and to make attractive use of left overs.

The Home Management and Home Improvement work, the purchase and care of household equipment, the wise use of the home maker's time and energy are parts of our extension program which are much like your program. In many states the Home Management work has begun through Kitchen Improvement. "The Better Kitchens" work has been a popular project in all parts of the country—because it is filling a real need. The farm home maker spends more than half of her waking hours in her kitchen in the preparation and clearing away of food, in washing, ironing, and cleaning. In many cases the work is done in a kitchen that is far from efficient.

The problems facing the extension worker in her attempt to lighten the tasks of the farm home maker may be grouped under three heads:

1. Many kitchens are poorly arranged, poorly lighted, and insufficiently equipped.

2. There is lack of money to make the larger investments.

3. Habit has kept many home makers from realizing that more system in the kitchen, and better equipment would release time and energy for other worth while activities connected with the job of home making such as child guidance and participation in community affairs.

To overcome these difficulties the better kitchen work in several states has taken the form of a kitchen improvement contest. Friendly rivalry is utilized as a stimulus to arouse home makers to make changes to save time, steps and energy. The contest usually covers a period of from three to six months, to allow time for changes to be made. When the kitchens are judged, and awards made, it is interesting to note that the prizes are not given to the finest and most beautiful kitchens, because there is a small amount of money available for kitchen improvement in most farm homes. Rather the prizes are awarded on the basis of the greatest number of changes made for the benefit of the housewife and for sincere attempts to secure greater convenience and beauty in the home maker's work shop.

It is interesting to note that women who have made these changes are saving themselves an average of 200 steps a day. One is also impressed with the small cost of these changes.

Our workers consider carefully before suggesting to the home maker the purchase of new equipment, knowing that in many of the farm homes there is less than $1000 a year for family living, which must cover expenditures for food, clothing, education, health, and recreation, as well as house furnishings and equipment. A recent survey of 1300 farm families in the middle west showed an average annual expenditure of only $44 for all furnishings and equipment purchased. The survey which was made early this year by the United States Department of Labor of 100 families in Detroit who are receiving the $7 a day wage paid by Henry Ford, shows that the annual cost of furnishings and equipment is $88. It is interesting that this should be just double the amount spent by farm people.

While the farm women who are enrolled in the better kitchens work do not as a rule make a large expenditure, many worth while improvements

* Digest of address at Home Service Luncheon, A. G. A. Convention, Atlantic City, N. J., Oct. 14, 1930.

are made. Accounts of the work from all over the country tell much the same story; a little money with a great deal of thought, combined with much scrubbing and some paint have resulted in improvements out of all proportion to the outlay of time and money. In our Home Management program much is being done to lead the home maker to consider time in somewhat the same way she does money; to think of an hour as she does of a dollar, to be expended with care and a weighing of alternatives as money must be spent. Studies are being made along this line which reveal that in some households time is wasted because of poor methods of work, poor equipment, poor working arrangements. The solution may be new equipment, or the remodelling of the kitchen or storage spaces added. In another case the point of attack may lead to changes in ways of caring for children. In another, simplifying of menus. In helping the home maker with these problems the best way seems to be to assist her in undertaking one change at a time, the easiest ones first.

In connection with this you will be interested to know that the annual reports of our home demonstration agents show that 21,000 women followed for the first time in 1929 a systematized plan of household work.

Approximately 29,000 kitchens were reported planned and rearranged for convenience and 56,000 homes obtained additional labor saving equipment as a result of home demonstration work.

The home service director of a utility company should know the state demonstration leader, the state extension nutritionist, and state household management specialist, as well as county home demonstration agents in counties where home service departments are located, and acquaint herself with the objective of the extension program as they relate to foods, nutrition and household management and other points of contact between her own program and that of the Extension Service.

State and county extension workers may well discuss with Home Service Department Directors problems encountered in local homes and may interchange experiences on successful methods of meeting these problems.

Home service department workers may reinforce the extension program as occasion arises by emphasizing practices which the Extension Service is advocating locally. Examples are: Use of milk, fruits and vegetables; menu making; dishes and meals suitable for children; approved methods of cooking vegetables, meats, etc.; care and use of cooking and heating equipment; efficient use of time in household tasks.

State home demonstration leaders and state specialists may well address conferences of home service department workers on the objective and methods of the state extension program, and on results of recent research of interest to Home Service Department workers. A discussion of problems encountered in local homes, and interchange of successful methods in helping to meet the same, would be mutually beneficial.

Home service department directors may place at the disposal of local extension groups the facilities of their departments in any appropriate way.

The home service department may request the privilege of reprinting and distributing such federal and extension literature along the lines of its own program as state home demonstration leaders may consider appropriate; or may emphasize approved practice in "box" in their own literature.

J. W. Piatt Passes Away

JOSEPH W. PIATT, industrial engineer of The Brooklyn Union Gas Company, and editor of that company's *Weekly Bulletin*, died October 7 after a protracted illness.

Mr. Piatt had been with The Brooklyn Company for seventeen years. The *Weekly Bulletin* is an accomplishment of Mr. Piatt. He edited it since its start more than five years ago. He was also known for his writings published in various gas magazines. The color of his technical articles made them interesting, as well as informative, reading.

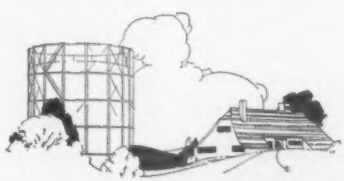
In his capacity as industrial engineer, Mr. Piatt made several contributions to the industry. He has to his credit a number of inventions now in use in the gas business.

Serving Our Public

(Continued from page 495)

the industries to which we desire to appeal; the other, the development and perfecting of industrial appliances to fit the needs of the individual plant. Both have a positive effect upon the industry's relations with the people.

All this is but a bare outline of the manner in which, consciously or unconsciously, the activities of the American Gas Association relate to and bear directly upon the industry's service to the American people. It was suggested to us that attention might be paid within the Association to the manner in which these activities relate to one another, how they supplement one another, how they are coordinated and focused upon the general results we want to obtain. On the surface, at least, duplication of effort does not appear, and this advisory group is not sure that a certain amount of duplication, at least until developments reach the point where they can be measured and appraised, is a disadvantage. At all events, the summary of activities here brought together might afford a basis for a study of the situation as a whole.



It was our belief at the time the Association was organized that public relations is the business and the concern of everybody connected with the gas industry. That continues to be the opinion of this advisory group today, but that does not mean that it should be thought of as "anybody's business." Its various aspects should continue to receive consideration and study in all of the educational and committee work to which they are properly related, and the results of these combined and coordinated efforts will more firmly establish the industry in public recognition and good will, always assuming that we have first laid the essential foundation of satisfactory service at a satisfactory price, without which we have nothing upon which to erect a larger good-will structure.

T. R. Weymouth Joins Columbia E. & M. Corp.

THOMAS R. WEYMOUTH, chairman of the board of directors of the Oklahoma Natural Gas corporation, Tulsa, last month announced his resignation as an official of that corporation and affiliated interests effective November 1, to accept a position as vice-president of the Columbia Engineering and Management corporation with headquarters in New York City.

T. R. Weymouth

Mr. Weymouth, who became president of the Oklahoma Natural organization in 1928 and chairman of the board this year, is recognized as one of the foremost men in the natural gas industry. After his graduation from the Massachusetts Institute of Technology as an electrical engineer, he spent five years in electrical work, engaged in the design and construction of hydroelectric power systems. In 1903 he entered the oil and gas fields in Pennsylvania and since then has been engaged in engineering and executive capacities with several large companies, the principal of which was the Iroquois Gas Corporation of Buffalo, of which he was president for five years before coming to Oklahoma.

He has acted as a consulting engineer in rate procedures both in the United States and Canada. He invented the orifice meter for measuring gases, an integrator for computing orifice meter records and several other devices for use in the oil and gas industry, and originated the "Weymouth Formula" for computing the flow of gases in long pipe lines.

For many years he has been actively identified with the American Gas Association, Society of Mechanical Engineers, of which he has recently been elected vice-president, and has served on numerous important committees of these organizations.

E. C. Deal, president of the Oklahoma Natural Gas Corporation, will assume the duties of chairman of the board of directors in addition to his present office when the resignation of Mr. Weymouth becomes effective.

McCarter Medal Awards

Recent awards of Thomas N. McCarter Medals by the American Gas Association for the resuscitation of persons overcome by gas by use of the Schafer prone pressure method were announced last month as follows:

Elmer Jackson, inspector of the Queens Borough Gas & Electric Company, who saved the life of Mrs. Jean Ginsberg, of New York, who was overcome by gas while visiting her sister at Edgemere, L. I., last June.

Elmer Jackson

Wm. Rue

William Rue, of South Amboy, N. J., an employee of the Public Service Electric & Gas Co., who saved the life of Mrs. Frank Keenan, of Sayreville, N. J., when she was overcome by gas last February.

Conrad Schroepfer, an employee of the gas department of the Public Service Electric & Gas Co. of New Jersey, who resuscitated Mrs. Emma Messler, of Plainfield, N. J., when she was overcome by gas last March.

C. Schroepfer

E. A. Hill

Eugene A. Hill, an orderman employed by the South Carolina Public Service Company, who saved the life of Mrs. Semken, 83 years old, of Charleston, S. C., when she was overcome by gas while at work in her kitchen.

Association Secretaries to Visit Laboratory

THE annual meeting of Public Utility Association Secretaries and Directors will be held at the Statler Hotel, Cleveland, Ohio, on Monday and Tuesday, December 1 and 2, 1930. Chairman Bush, Harrisburg, Pennsylvania, has appointed a Program Committee, headed by Kurwin R. Boyes, secretary of the American Gas Association, New York City. He, with his associates, is developing an exceptionally fine program which will have a common interest to all directors of public utility associations, which includes gas, water, electricity, street railway and telephone.

The Arrangements Committee is headed by D. L. Gaskill, Greenville, Ohio. Mr. Gaskill has already arranged for the first afternoon to be spent in the American Gas Association Testing Laboratory in Cleveland. The second afternoon will be spent at Nela Park Laboratories.

Cities Service Improves Compressor System

AN improvement in the compressor station system of the Cities Service Gas Company will be the new $1,000,000 station near Blackwell, Okla., now nearing completion. This station will be used to boost gas from the Oklahoma City field into the transmission line system of the company which serves many cities and towns in Oklahoma, Kansas, Missouri and Nebraska. Five 1,000-horsepower Cooper engines are now being installed in the main plant.

In an auxiliary building will be housed the machine shops and a 290-horsepower Cooper engine and generator, three electrically-driven centrifugal water pumps and two electrically driven Ingersoll-Rand air compressors.

A third building will be the office and community club room, and will contain shower baths, lounging rooms, reading rooms, etc.

A five-room cottage is also being constructed for the superintendent. Approximately 175 men are being given employment in constructing the plant.

Personal

E. G. Fulton has been appointed sales manager of the Natural Gas Equipment Company, Inc., Los Angeles, Calif.

Alan H. Harris has been appointed district engineer of the Koppers Construction Company with offices at Chicago, Ill.

J. F. Weideman, formerly manager of the Delphos, Ohio, Gas Company's plant, has become manager of the Iron Mountain Gas Company, Iron Mountain, Mich.

Garrett B. Linderman, Jr., has joined the organization of the Pittsburgh Equitable Meter Company with offices at Pittsburgh, Pa.

Walter F. Munnikhuysen, formerly district engineer for the Koppers Construction Company, Chicago, Ill., has been appointed manager of the Connecticut Coke Company, New Haven, Conn.

Charles E. Starr, president of the United Gas Utilities, Inc., the Gas Company of Miami Beach, Inc., and Fort Lauderdale Gas Company, has assumed charge of development and construction of nine gas plants in Central and South American cities for a syndicate of New York bankers.

S. T. McAdam has been named manager of the Alexandria Gas Company, a subsidiary of the Washington Gas Light Company.

W. G. Winters has been appointed vice-president and general manager of the Houston Gas and Fuel Company, succeeding Alba H. Warren, who resigned due to illness.

Charles L. Cadle, of Rochester, N. Y., has been appointed general manager of the Associated Gas and Electric Company properties in New York state.

R. W. Featherstone has been transferred from the store department of the Lone Star Gas Company to the purchasing department of the Missouri Valley Pipe Line Company at Omaha, Nebr.

Edward C. Donohue has been named district manager of the Southern Union Gas Company at Albuquerque, N. M.

M. T. Scott has been appointed to the newly-created office of general sales manager of the Central Indiana Gas Company, Muncie, Ind.

A. E. Reynolds, vice-president and general manager of the Springfield Gas and Electric Company, has joined the New Brunswick Power Company at Saint John, New Brunswick, Canada, in a similar capacity.

Southern Gas Association

THE Directors of the Southern Gas Association have chosen Chattanooga, Tennessee, as the place, and June 9, 10 and 11 as the time for their 1931 Convention, according to an announcement of Secretary G. H. Schlatter.

Jesse A. Harvey Wins A. G. A. Meritorious Medal


American Gas Association

MERITORIOUS SERVICE MEDAL

This Certificate is awarded with the

American Gas Association Meritorious Service Medal and Button

to

Jesse Adams Harvey

an employee of the Empire Gas & Electric Company, Geneva, New York

In recognition of prompt, meritorious and outstanding intelligence, judgment and bravery in the saving of life and property in Auburn, New York on April sixteenth, nineteen hundred and twenty-nine. The act is judged by the Association to have been the most meritorious performed in the gas industry during the eighteen months period ending June thirtieth, nineteen hundred and thirty.

Alexander Forward
Managing Director

September 17, 1930

Bernard J. Mullaney
President

For saving the lives of six men who had been overcome by gas, Jesse Adams Harvey, of Auburn, N. Y., a tinsmith, employed by the Empire Gas and Electric Company, was awarded the American Gas Association Meritorious Service Medal at the Twelfth Annual Convention of that Association at Atlantic City, N. J., October 15. The presentation was made by B. J. Mullaney, president of the Association. Each year this award, which was made possible by the generosity of Walter R. Addicks, senior vice-president of the Consolidated Gas Company of New York, New York, is conferred upon the individual who is adjudged to have performed the most meritorious act in the gas industry in a twelve-month period.

3000 Employees Enroll for Course

ANNOUNCEMENT is made by the American Gas Association's Committee on Education of Gas Company Employees that 3,000 employees of gas companies whose positions bring them in contact with the public have been enrolled in the Course in Employee-Customer Relations, which started October 1. Additional enrollments are coming in steadily.

The Course consists of a leader's manual and six units or booklets which form the basis of discussion in conference groups organized within the company. The booklets are provided one at a time at four-week intervals. In order that the summer vacation period may not interfere with the Course, enrollments should be made promptly and the program put into operation without delay.

Enrollment blanks and further information may be obtained from K. R. Boyes, Secretary, American Gas Association, 420 Lexington Avenue, New York.

Publicity and Advertising Section

JAMES M. BENNETT, Chairman ALLYN B. TUNIS, Secretary DONALD M. MACKIE, Vice-Chairman

Poster Advertising Campaign Offered A. G. A. Members

ON the opposite page are reproduced six posters designed for use in a proposed outdoor advertising campaign, which is scheduled to be inaugurated with the New Year by the American Gas Association as a new service to members, if the demand justifies it.

Attention of member companies is invited to this contemplated campaign, and if sufficient interest is shown in it, posters will be available for January display.

Local outdoor advertising companies can arrange space for showings in any city or community. These posters are the standard 24-sheet size, designed for use on regulation panels throughout the country. Six different styles have been prepared for use throughout the year, and any subscriber may order any quantity of one or all styles.

Another feature of this proposed campaign is that arrangements have been completed whereby the posters will be available in reduced size for car cards and window displays.

Prices and other details may be had on application to Keith Clevenger, Director of Publicity and Advertising, American Gas Association, 420 Lexington Avenue, New York, N. Y.

John L. Conover Winner of Munroe Award

American Gas Association

Charles A. Munroe Award

This is to certify that
the Charles A. Munroe Award has been conferred upon

John Livingston Conover

for the greatest contribution made during the year by an individual to the advancement of the Gas Industry.

By action of the Executive Board September 17, 1930.

Alexander Forward
Managing Director

Bernard J. Mullaney
President

John Livingston Conover, chairman of the A. G. A. Accounting Section and auditor of the gas department of the Public Service Electric and Gas Company of Newark, N. J., was presented with the Charles A. Munroe Award for the most outstanding contribution to the general interest of the gas industry during the year. Mr. Conover was largely responsible for the wide application of machine accounting systems to practically every phase of public utility accounting, resulting in reduced costs, improved public relations and more efficient operation. This award is made annually from an established fund, donated by Charles A. Munroe, a former president of the Association, and is looked upon as one of the most distinctive honors within the gift of the gas industry.

J. L. Conover

Indiana Gas Association

AT the annual convention of the Indiana Gas Association held at French Lick, Indiana, September 23 and 24, T. L. Kemp, of the Indiana Consumers Gas and By-Products Company, Terre Haute, was elected president; F. X. Mettenet, of the Utilities Service, Inc., Indianapolis, vice-president; and P. A. McLeod of the Northern Indiana Power Company, Huntington, Indiana, secretary, for the new year.

E. R. Acker, chairman of the Commercial Section, has appointed as chairman of the Home Service Committee, Miss Karen Fladoes, Home Service Director of the Equitable Gas Company, Pittsburgh, Pa.

Probably the Home Service director who traveled the greatest distance to attend the A. G. A. convention was Miss Hesperia Lee Aylsworth of the Canadian Western Natural Gas Light, Heat and Power Company, Calgary, Alberta. She, with Miss Jessie Read, of the Consumers Gas Company of Toronto, Ontario, represented the Canadian Home Service Departments.

Posters for Proposed Campaign

THIS set of six lithographed posters will be available December 1 to December 15, 1930. They are of standard 24-sheet size—12 × 25 feet, with space for company imprint.

Car card and display window card reproductions of these posters, size 11 × 21 inches, can be supplied.

See your local outdoor advertising company.

For information write Keith Clevenger, Director of Publicity and Advertising, American Gas Association, 420 Lexington Ave., New York, N. Y., attention Keith Clevenger.

Industrial Gas Section

D. W. CHAPMAN, Chairman C. W. BERGHORN, Secretary A. J. PETERS, Vice-Chairman

Research Report on Scaling Steel at Forging Temperatures Available

RESULTS of the third part of the program of research in the application of heat to forging sponsored by the Committee on Industrial Gas Research at the University of Michigan are available in printed form. A thorough discussion, based on a year's laboratory research and field work, was presented on behalf of the Committee at the recent annual convention of the American Society for Steel Treating by W. E. Jominy and D. W. Murphy of the Department of Engineering Research, University of Michigan.

The relative scaling action of air, steam, carbon dioxide and oxygen on steel at 2000 to 2500 degrees Fahr. is presented in this paper. In addition, the effect on scaling of time of exposure, of rate of flow of the scale producing gas, and of variation of temperature is given. It is shown that the rate of scaling decreases with the time of exposure and increases with the temperature. Of special interest is the finding that increasing the rate of flow of the gas above 50 feet per minute has practically no effect on the rate of scaling. Between zero and 10 feet per minute, the rate of flow has a very pronounced effect, the slower the rate, the less the scaling.

The importance of reducing or eliminating the scale resulting from heating forgings is receiving considerable attention in metallurgical circles. The authors draw, among others, the following conclusions:

1. Increasing the rate of flow of the gas between 0 and 2 feet per minute causes a very marked increase in the rate of scaling at 2300 degrees Fahr. With air and carbon dioxide, relatively little change in the rate of scaling is produced by increasing the rate of flow from 2 to 10 feet per minute. With these gases no change is produced with rates of flow higher than 10 feet per minute. In the case of steam, a noticeable increase in the rate of scaling occurs with increase in rate of flow from 2 to 15 feet per minute, and a very small increase in scaling rate up to 60 feet per minute, after which increasing the rate of flow has no effect on rate of scaling.

2. Increase in temperature causes increase in scaling rate. Between 2400 and 2500 degrees Fahr., the scaling rate increases sharply. When heated to 2375 degrees Fahr. in nearly pure oxygen, ordinary plain carbon steel oxidizes so rapidly that it is melted by the heat liberated in the chemical reaction with oxygen. When heated to about 2425 degrees Fahr. in air, the steel becomes hotter than the furnace atmosphere, but does not liberate enough heat to melt a low carbon steel.

3. Increase in time of exposure causes increase in the amount of scale produced, but decrease in the rate of oxidation.

4. Scale on steel acts as a partial protection against further scaling. The type of scale formed has a decided influence on the further rate of scaling.

5. Under the conditions obtaining in this research the average iron content of the scale formed with air approaches that of Fe_3O_4, and the average iron content of scale formed in carbon dioxide or steam approaches that of FeO.

Copies of this report on scaling can be secured by addressing the Secretary, Committee on Industrial Gas Research, American Gas Association Headquarters, 420 Lexington Avenue, New York City.

Parts I and II of the forging research consisted of studies of overheating and burning of steel at forging temperatures. A limited number of copies of the reports covering these previous researches are also available.

Oklahoma Extends Gas Lines

A NUMBER of Oklahoma towns, which heretofore have not had natural gas service, will probably be burning natural gas within a few months. Some will be connected with gas lines before winter, including Duke, where a gas distribution system is being completed by the D. & O. Utilities Inc., and Agra where the Pact Gas Company is putting in a distribution system.

Several more Oklahoma towns have prospects of securing natural gas before Spring including Carmen, Aline and Dacoma, which will be added to the lines of the Winchester Oil & Gas Company if franchises are granted.

The Winchester Oil & Gas Company is now operating in several towns of Northwestern Oklahoma, securing gas through a pipe line connected to gas fields in Barber County, Kansas. Carmen, Aline and Dacoma are in the vicinity of the existing lines of the company.

Officials of the Pioneer Gas Utilities Company announce that construction will soon begin on a gas pipe line to Jones City. Connection will be made with the line already laid from the Oklahoma City field eastward to Choctaw and Harrah and now serving several towns.

Future of the Gas Industry

(Continued from page 503)

great wealth, to be in a country that is only developed to a very limited extent, and we should look back to the careers of the successful industrialists of the past and remember that they achieved in the face of obstacles, that we do not have to face, and they achieved by having the courage to back their judgment as to what was necessary to be done among themselves and their associates.

Now, if the people of the gas business would follow that same course, if they will make extensions in their plants at a time when they can do the work cheap, a good deal of that work will more than compensate for the curtailments that they have to make in their operating expenses in order to meet a reduction in output. If we will pursue that course, we will meet again next year, I am sure, under better circumstances and better business conditions, and we will still further broaden the field of our operations and show that we are able to meet the responsibilities that were imposed upon us irrespective of the immediate conditions of business.

It is a very great pleasure for me to be here, gentlemen. I did not expect to be here this year. I like to come to these occasions. I like to see the young men pushing ahead in this and kindred industries. I am very proud to sit here this morning and listen to the entirely different points of view of gas men as to rates as compared to ten or fifteen years ago. I shall hope to have the pleasure of joining you again and again as the years go by.

Commercial Section

E. R. ACKER, Chairman J. W. WEST, Jr., Secretary SAMUEL INSULL, Jr., Vice-Chairman

Developing Natural Gas Sales*

R. E. FISHER
Pacific Gas & Electric Co., San Francisco, Calif.

THE advent of natural gas to any community is an important economic asset. Not only does natural gas benefit the domestic and industrial consumers but it aids a community in attracting new industries.

The vast development in natural gas projects that are being carried on throughout our country reflects a continuous endeavor of industry to improve the environment in which we live. The performing of these huge tasks represents the work of many hands to add to the comfort of many. It has embodied the vision of leadership, the research of scientists, the designing, skill and calculations of engineers, the toil of the laborer and the thrift of the investor all organized and directed by enterprising utilities.

In Western America during 1929 and 1930 over 10,000 miles of natural gas mains will have been constructed. This achievement for our industry and other natural gas developments now under way and proposed is also an important asset to our government in the conversion of this important natural resource.

The development of natural gas in Northern California, which is a territory principally served by the Pacific Gas and Electric Company, was initiated as early as 1921, at which time the possibilities for investigation of obtaining natural gas to replace the manufacture of gas and crude oil. The investigation included the possibility of coke ovens and water gas plates operated with coal in addition to drilling of wells in certain territories in search of natural gas. Finally during the first part of 1928 plans were practically completed for distributing natural gas from the fields in Southern California in the vicinity of Ventura. However, at about that time extensive drilling in the Buttonwillow fields west of Bakersfield opened up a new field of dry gas and plans were modified to include the resources of the Buttonwillow fields in the Northern California project. After these plans were under way, it suddenly developed on October 5, 1928, that the Milham Exploration Company brought in a well in the famous Kettleman Hills, southwest of Fresno, with a capacity of 65,000,000 feet of gas a day and 3,000 barrels of 60. gravity oil. The oil was water white and could actually be used in place of gasoline in the operation of automobiles. This well and other wells since drilled average a depth of more than 7,000 feet with a natural gas well pressure of over 3,000 lbs. Since the Kettleman Hills was only 200 miles south of San Francisco, the original natural gas project was again changed and the Pacific Gas and Electric Company, in February, 1929, started actual construction work on the first line extending to both Kettleman Hills and Buttonwillow for a total distance of 270 miles. Six months later the pipe line was completed with natural gas delivered in San Francisco.

At first it was planned to initially serve a 700 B.t.u. gas in place of straight natural gas; however, the drilling in Kettleman Hills made available such tremendous quantities of natural gas that in order to cooperate with the Conservation Law in California it was decided to distribute straight natural gas. To assure continuity of supply a second pipe line was constructed and completed in cooperation with the Standard Oil Company of California. The combined capacity of these two lines is in excess of 200,000,000 feet per day without the use of compressors since the initial pressure at the fields is about 500 lbs. The investment in this natural gas project represents over $27,000,000 to date.

A market or potential load survey was a vital part of the preliminary work of the natural gas project into this territory, the survey work including the determination of the amount of business in the territory as well as the location of large consumers and the amount of gas they might use. This survey showed that practically all the fuel requirements in Northern California were supplied by fuel oil and furthermore that most of the users of fuel oil had contracted for it on a basis that required that the fuel oil purchased would be the fuel exclusively used. Since these contracts ran for a period of years it is obvious that competition would be exceedingly keen to replace this fuel oil usage with natural gas. This analysis also indicated that in the domestic field the potential business to be obtained was principally that of house or building heating since most of the domestic cooking or water heating was already being done with manufactured gas.

Preparations for the introduction of natural gas included elaborate plans for the change over from manufactured gas to natural gas. For this over 1,000 men were employed and trained and each one wore a special uniform. Prior to the arrival of natural gas, large tanks of it were shipped to a testing laboratory where all types of appliances were set up and tested to determine the equipment necessary to prepare changing it from manufactured gas to natural. The plans of the company included a program systematically calling upon all consumers to make the necessary adjustments on their appliances to use natural gas. The commercial and industrial consumers were each surveyed ahead of time and the necessary equipment for the change over was designed by the Company's research engineers.

In addition to large newspaper advertisements a special letter was sent to each consumer at the time natural gas was turned on giving them the necessary instructions or advice. The problem of finding people at home was serious in some cases and necessitated many call-backs. Arrangements were made with gas appliance dealers, especially gas water heater agencies who maintain their own service departments, for them to handle their own service calls and adjust their own installations in so far as possible. Our territory was districted in each city so that within a few days all of the consumers in the district could be covered; however, in San Francisco, for example, there is one district comprising 112,000 domestic consumers that was successfully cut at one time.

One item worthy of notice in conjunction with the appliance adjustment and survey work was that of having a record survey made among all consumers of the various types of appliances now in use. This information was especially valuable to formulate a follow-up sales plan because it showed the potential market for water heating and other appliances.

In developing natural gas sales plans the Pacific Gas and Electric Company capitalized upon its policy of gas appliance dealer cooperation and held a series of meetings with all gas range, gas water heating and heating dealers in its territories. Special cards were printed for the use of dealers as well as our own salesmen showing the comparison between the manufactured gas rates and the natural gas rates and including certain important factors about the use and advantages of natural gas.

At this point I should emphasize that the objective of the Sales Department of the Pacific Gas and Electric Company is that of load building and that the Company's activity is concentrated on those types of appliances in the domestic, commercial and in-

* Delivered before Commercial Section, A. G. A. Convention, Atlantic City, N. J., Oct. 15, 1930.

dustrial field that would bring us the greatest amount of desirable load. Our co-operation with heating dealers resulted in their selling natural gas to over 80% of their prospects whereas previously when only manufactured gas had been available these heating dealers had been selling furnaces using competing fuels in a majority of cases. In addition to meetings with dealers and jobbers and manufacturers special meetings were also held with architects, real estate men, heating engineers, consulting engineers, building and loan associations and other groups.

The Company's sales activity in the domestic field was from two standpoints. One featured regular domestic appliances, such as furnaces, floor furnaces, boilers, automatic water heaters and similar appliances. Our sales force which had been doubled for this activity was specially trained and organized to work on a creative basis and their compensation recognized the sale of gas heating equipment by heating dealers to any prospects that our salesmen had developed.

The other phase of our sale activity in the domestic field was concentrated upon conversion burners. The survey that had been made by the service men during the change over work found that there were approximately 45,000 coal and oil burners in our territory. It is interesting to note at this point that less than 15% of our residential domestic consumers had basement furnaces. This would indicate that many of them were Easterners who still thought that heat was not needed in California. The sales program on conversion burners included a preliminary study of this activity in other cities and the perfection of a special type of burner to meet the conditions in our territory. Over 100 men were specially trained for this sales work as well as service crews of installation experts. Each conversion burner sale was subject to cancellation by the Company if the furnace proved defective when tested by our Inspector. If the furnace was in good condition the Inspector selected the proper size burner to fit the fire box and arranged for the installation crew to follow up for proper installation.

This conversion burner sales activity was supported by a series of five direct-by-mail letters and literature to all of our conversion burner prospects and special advertising was carried in all of the newspapers. Billboard advertising and stickers placed on all statements of the Company also featured conversion burners during the spring and summer months. With the exception of San Jose all of our territories including San Francisco and Oakland received natural gas during the summer of 1930. Nevertheless, during the spring and summer of 1930 it had been determined to sell as many conversion burners as possible and of course it is difficult to sell heating during the spring and summer months. This was offset by a special sales offer of only $10.00 down and the balance dated October 1 when the monthly payments of $5.00 a month would start. The total selling price was $110.00 for a conversion burner installed complete with thermostat, regardless of the size of the furnace. This was considered one of our most successful sales features.

As of September 1, 1930, over 6,000 domestic conversion burners have been sold or nearly 15% of the total potential market and the activity was actually started March 1. In addition to conversion burners for basement furnaces our Company developed a special type of conversion burner for coal-fired circulating room heaters, inasmuch as there were some 50,000 prospects of this class in our territory.

Commercial heating sales, that is, the sale of heating equipment for flats, apartment houses and office buildings, was organized with a corps of 20 properly trained heating engineers concentrating upon this activity. To aid in this sales program degree day charts were made up for each city in our territory so that an intelligent and proper analysis could be made of the heating requirements. Each one of these sales involved a careful cost analysis for the prospect including not only the cost of the fuel he was using, but the cost of using it including items such as servicing, maintenance, current for motors, depreciation, etc. This was necessary because in competition with fuel oils our natural gas was sold at a premium of from 10% to 80% over the cost of fuel oil alone. The equipment featured in this activity included the regular type of gas boilers, also conversion burners already in use. The analysis of commercial heating field indicated a potential market of $6,500,000 dollars annual revenue for the company.

Industrial sales were organized on the basis of selling firm gas and surplus gas. The sale of firm gas has been temporarily treated rather passively because of the more important and immediate results desired in the sale of a large volume of gas to surplus natural gas prospects. Nevertheless, in addition to the sale of some industrial gas, practically all of the hotels and restaurants in our territory have been converted to gas and in the bakery field a special type of burner was developed for the small sized bake oven which is being successfully sold to replace oil burners.

The sale of surplus natural gas represents a total potential market to the Company of about $6,500,000 annual revenue. In organizing for this activity not only were accurate surveys and analysis made of each range prospective consumer, but our corps of 35 sales engineers were conducted on a tour of investigation and study in other cities where natural gas had been available for years. It will be appreciated that the sale of surplus natural gas means that natural gas is sold subject to shut off for which reason standby equipment for the use of oil burner was necessary with most of the consumers. Prospective consumers were solicited for surplus natural gas on the basis of contracts covering the period of three years. Frequently careful surveys and reports were necessary on individuals to determine to these prospective users that gas could be used to their advantage. Included in this of course it was necessary to give an estimate of the cost of the burner equipment or other equipment required to utilize natural gas.

In the initial stages of the solicitation of this business some installations were arranged for on a trial basis bearing from one to six months; however trial installations have the disadvantage of permitting the competitive fuel salesmen to offer a reduction in the price of fuel to meet the economies which are demonstrated through the use of gas.

The burner equipment that was sold by the Company could be paid for in monthly payments over a period of time to enable the customer to write off the equipment from savings resulting from the use of natural gas. In some cases the purchase of the equipment was on a three-year basis since that was the period of time covered in the surplus natural gas contracts.

Considerable care was used in putting into operation burner equipment for these large gas installations. Careful instructions were given to the operators and in addition a member of a specially organized force of five engineers made flue gas analysis and established the proper pressure for the operation of the equipment.

Since surplus natural gas is used in place of other fuels it is fundamentally necessary that the purchaser receive some benefits from its use. These benefits are measured in the final analysis in dollars and cents and if it cannot be found that there are definite savings to underwrite the expense of burner equipment the utilization of gas by the consumer is economically unsound.

In the surplus natural gas activity our Company has succeeded in obtaining business which represents about 30% of the potential market. It must be remembered that the competition in this field is exceedingly keen and that in many cases the negotiations were very difficult due to the nature of the existing fuel oil contracts.

In developing natural gas sales it was found highly advantageous to have some definite point where all types of industrial heating equipment could be exhibited and demonstrated. A special exhibit for educational purposes only was arranged for and not only were prospects brought there on individual occasions but many of the important group meetings with engineers and various organizations were conducted at the natural gas exhibit.

The sale of natural gas in our territory is by no means a completed job as yet although a favorable public acceptance has been created for natural gas. In many districts, coal dealers, for example, have organized and attempted destructive advertising and publicity. The most important consideration in our natural gas sales program, however, has been to tell the public, the dealers and even our competitors the true facts about natural gas, believing that our constructive endeavors along this line will win out in the long run.

Testing Laboratory

R. M. CONNER, Director

MANAGING COMMITTEE

R. W. GALLAGHER, Chairman N. T. SELLMAN, Secretary

Five Years of Laboratory Progress*

N. T. Sellman

By N. T. SELLMAN,
Secretary, Managing Committee

ORIGINAL plans for the establishment of the Association's Testing Laboratory were based principally upon the assumption that during the first few years of its existence it would be engaged largely in appliance testing work. As time passed, it became evident that an increasing portion of its activities would be devoted to research. At this date, approximately five and one-half years after its foundation, it is interesting to review the progress that has been made and note the marked growth in the amount of investigational work. During the past year, sums expended for research exceeded those of three years ago by 168 per cent. During this same period, the number of major investigations increased from a total of two to eight, while the number of minor studies, which are exceedingly numerous, increased to an even greater extent. This indicates, in a general way at least, that the institution's activities have followed along expected lines.

One of the Laboratory's major problems is the research which is conducted each year for our various approval requirements committees. We now have fifteen such groups in operation. The purpose of this work is to assist in the preparation of new requirements and the revision of existing ones. Investigations of this nature may vary from some very minor problem to a continued study requiring several years for its completion. A part of this work is being conducted at the U. S. Bureau of Standards, where we still retain a research associate. The Bureau has given its full cooperation in such matters and the personnel of that organization is entitled to considerable credit for the assistance which it has rendered.

Our mixed gas research was completed early in April of this year and was followed by the publication of a treatise on this subject, summarizing the results of the past three years' work. This report is now available to accredited delegates of member companies on application to Association Headquarters.

Realizing the need for fundamental data on the utilization of higher hydrocarbon gases, the Mixed Gas Research Committee has projected its plans into the future over a three-year period and secured the approval of the Executive Board to carry this activity forward during the coming year.

The recent and rapid growth in the number of butane-air gas plants established throughout the country has aroused a great deal of interest in this subject and indicates the need for a general knowledge of the use of liquefied gas products. An investigation of this subject was begun early last year and has been continued up to the present date. In this work the Laboratory, under the guidance of the Committee, has endeavored to follow the developments which would naturally take place in the utilization of such fuels. As a first step in this direction, the possibilities of augmenting a base supply of natural gas with mixtures of a low-heating value manufactured gas and butane, to meet peak-load demands, were thoroughly studied. Since the completion of this phase of the problem, an investigation has been carried out also to determine the most flexible heating value standard for butane-air gas plants. Furthermore, a great deal of data has likewise been collected on dew points of butane-air mixtures under various conditions of temperature and pressure.

Coincident with the conduct of our investigation on butane and butane-air mixtures, a study of the chemical composition and the performance that could be obtained from different bottled gas units, used in conjunction with domestic gas appliances, was conducted. A portion of this activity has been financed by a number of the leading bottled gas manufacturers of the country. Valuable information has been obtained, most of which has been passed on to interested committees for the purpose of assisting them to draw up approval requirements for common types of domestic appliances designed to consume such fuels.

Last year marked the extension of the Laboratory's research activities into the industrial gas appliance field. Two important problems—one, the elimination of noise in industrial burners, the other, recuperation, are now being conducted under the supervision of the Industrial Gas Research Committee. While the findings secured to date are still very much in the preliminary stage, they are encouraging, and represent a new field of usefulness for the Association's Testing establishment. This new policy seems very appropriate, particularly in view of the rapid growth and the importance of this branch of our business.

Certain phases of our distribution problems are being studied as a result of our research on various kinds of cast-iron pipe joints, and of methods of repairing defective ones. This activity is being sponsored by the Pipe Joint Committee of the Technical Section. A report has been prepared on this subject and is being distributed at this Convention. In conjunction with this work, quite an elaborate program of research on patented type joints is being conducted for the Cast Iron Pipe Research Association.

While the expansion of our approval testing program has not been as great as that of our research activities, nevertheless there has been a very steady growth in the volume of this business. During the past fiscal year, 1,114 appliances were tested, of which 442 were finally approved. The first figure is 55 per cent greater than for the preceding year and represents the greatest number of appliances tested during any one year. Undoubtedly, the most gratifying development in connection with this activity is the marked increase in the number of new patrons. Forty-five new concerns submitted appliances which is 16 per cent of the total number of the Laboratory's patrons at the close of last year. While gas appliance ordinances and sales resistance, encountered at times by manufacturers of unapproved types of appliances, have been factors in bringing about this increase, we believe it can truthfully be said that the prime motive inducing the majority of new concerns to submit their products for test, was a sincere desire on their part to improve them.

Over 16,200 models of approved appliances are now available for our customers' use. The list includes gas ranges, water heaters, space heaters, boilers, furnaces, clothes dryers, incinerators, hot plates, and laundry stoves. In fact all of the commonly used domestic appliances are included. It is estimated that 75 per cent of all the domestic appliances sold or offered for sale last year were of the approved types.

That the Laboratory's efforts have resulted in a general improvement of our utilization equipment, there can be no doubt. A specific example demonstrating this fact is the action of one large concern now producing approved products in practically

*Delivered before General Session, A. G. A. Convention, Atlantic City, N. J., Oct. 14, 1930.

abandoning its Complaint Department and turning its complaint men into gas appliance salesmen.

Each year subcommittees, under the supervision of our A. G. A. Approval Requirements Committee, are revising and strengthening our test standards. An important development in this connection during last year was the acceptance of the A. G. A. Approval Requirements Committee as a Section Committee of the American Standards Association. Requirements finally adopted by this group, after approval by our Executive Board, should automatically become standards of the A. S. A.

The conscientious and able efforts put forth by all members of the approval requirements committees is not only indicative of the whole-hearted support being given our appliance testing and research program by member companies, but is a tribute to the committee-men as well.

Looking back over the past five years, we find that the Laboratory's progress has been largely along the lines originally anticipated. Its remarkable growth, the expansion of its activities, and its general acceptance by the industry, testify to its success.

Before closing, I wish to quote from a report given by H. C. Abell's committee more than six years ago, as follows: "It is expected that results will flow from this work of testing and certification, which will tend to greatly raise the standard of many appliances and to afford a measure of safety and performance which will be of the greatest value to the gas companies, to the manufacturers, and particularly to the public whom we serve." This expectancy has been well borne out as attested by a recent statement made by our Vice-President, Mr. Paige. In effect he said that, "compliance with our standards in the construction of domestic appliances has operated to reduce the cost of servicing and maintaining appliances."

The brief report, which I have given, indicates that some of these predictions have been fulfilled, and at this time I wish to point out that the industry has, in its appliance testing and research program, an activity possessing a great public appeal, which if properly utilized, should continue to grow in its effectiveness as an agency for the eventual establishment of gas as the universally accepted fuel.

Laboratory Activities During Past Year

THE fiscal year ending September 30, 1930, was one of accomplishment in all phases of the Testing Laboratory's activities. Those interested in obtaining a complete summary of the work completed last year will find it in the published Annual Report of the Laboratory Managing Committee. Some of the outstanding events may be briefly summarized as follows:

In appliance testing, 1,114 appliances were tested during the year, 442 of which were finally approved. This is the greatest number of appliances tested in one year since the establishment of the Laboratory. Another very encouraging feature was the addition of forty-five new companies which had never had testing work conducted before by the Laboratory.

The Inspection Department was exceedingly busy this year. Inspectors visited 237 factories during the year, and traveled a distance of approximately 41,000 miles. Nearly 2,000 certificates of approval and certification sheets were prepared and issued.

Activities in the Research Department increased tremendously during last year. The volume of this work conducted increased 168 per cent over 1927-28. Research problems under way and those completed have been listed in a former issue of the MONTHLY, and are summarized in the Annual Report.

The Staff of the Testing Laboratory during the past year increased from thirty-two to a total of fifty men and women.

Considerable new laboratory testing and research equipment was purchased, including a new 5,000 cu.ft. gas holder, low-temperature fractionating apparatus, recording thermometer, and numerous smaller instruments.

The paper, "Radiant Heat from Radiant Heaters and Its Measurement," prepared by the Laboratory Supervisor, created such general interest that it has been published in pamphlet form and is available upon application to the Laboratory or A. G. A. Headquarters.

The booklet entitled "A Trip Through the A. G. A. Laboratory" has been brought up to date and reprinted. This pamphlet contains a large number of pictures of the laboratory and its test equipment and describes in an interesting manner many of the laboratory tests. A new and considerably enlarged edition of "Laboratory Testing Policies" has also just been printed. It was published for the convenience of those interested in submitting gas appliances for test and approval. Information and instructions to manufacturers submitting appliances for approval test, and procedure for determining the type and number of tests required are briefly outlined therein.

Publication of the approval requirements in a popular form has been begun by the *Ladies' Home Journal*. Requirements for flexible gas tubing, ranges and central heating gas appliances have been completed and distributed by The Journal to its subscribers in this form.

Approval requirements have been constantly extended and strengthened by the activities of the twelve requirement committees. During the fiscal years of 1929-1930, thirty-three committee meetings were held. The whole-hearted manner in which the men serving on these committees have given their time and efforts toward making the Association's testing and research program a success is most creditable. The Laboratory and the industry in general owe them a debt of gratitude.

Three new committees have recently been organized to prepare approval requirements for hotel and restaurant ranges, high-pressure boilers, and garage heaters. A tentative schedule indicates that approximately fifty approval requirements committee meetings will be held during the next year.

Annual inspections for the renewal of appliance approval for 1931 have already begun. W. M. Couzens has been assigned to the Pacific Coast section and will have charge of the new laboratory inspection station to be established there. K. H. Flint has been appointed Chief Inspector and will supervise all Laboratory inspection work in the East.

Public Utilities Association of Virginia

THE annual convention of the Public Utilities Association of Virginia will be held at the Cavalier Hotel, Virginia Beach, Virginia, November 13 and 14, 1930.

The Empire State Gas & Electric Association

AT a meeting of the Executive Committee of the Empire State Gas and Electric Association, held October 9, the following officers were elected: President, William J. Welsh, New York and Richmond Gas Company, Stapleton, New York; vice-president, Frank W. Smith, The United Electric Light & Power Company, New York, N. Y.; treasurer, Francis J. Brett, Niagara Hudson Power Corporation, New York, N. Y.; secretary, Charles H. B. Chapin; and engineer, George H. Smith.

The Executive Committee is composed of Charles E. Bennett, George B. Cortelyou, W. Alton Jones, Henry E. McGowan, Sanford J. Magee, D. Edgar Manson, George W. Olmsted, and Alfred H. Schoellkopf. The Managing Committee of the Association is made up of William J. Welsh, Frank W. Smith, Francis J. Brett, Henry M. Brundage and Charles L. Cadle.

Gas Appliance and Equipment Developments

New Riverside Line

The Riverside Boiler Works, Inc., of Cambridge, Massachusetts, in addition to their line of Packo All-Copper Automatic Storage Systems with side-arm heaters, have added a new line of underfired external flue hot water systems, put out under the trade name, "Riboco." These are furnished with either galvanized or copper tanks and are made in 15-, 20- and 30-gallon sizes. Circulars on the Riboco are ready for distribution, as are circulars on the Packo.

Manual Ready for Distribution

The eighth edition, American Pipe Manual, issued by the American Cast Iron Pipe Co., Birmingham, Ala., is ready for distribution to users of cast-iron pipe and fittings.

"Gas Automatic"

For the first time the "Gas Automatic," latest product of the Fox Furnace Company, was exhibited at Atlantic City during the twelfth annual convention and exhibition of the American Gas Association. The "Gas Automatic" is described as "The Advanced Gas-Fired Heating Plant."

Temperature Control

The Wilcostat Automatic room temperature control for all gas-fired heaters is being produced by the Wilcolator Company, Newark, N. J.

Magnetic Contactor

Cutler-Hammer, Inc., 15 Twelfth Street, Milwaukee, Wis., have redesigned their entire line of type AAA automatic starters for small A.C. motors, to incorporate a newly-developed "Twin Break" magnetic contactor.

"Hot-Kold"

The General Iron Works Co., Cincinnati, Ohio, has withdrawn from all other lines of steel production, and is concentrating its entire facilities on the manufacture and distribution of Hot-Kold heating and air conditioning systems. They are exclusively gas fired.

Ruud Issues Catalogue

The Ruud Manufacturing Company of Pittsburgh, Pa., has issued a new file size catalogue on Ruud Multi-Coil Automatic Storage Systems and Volume Water Heating. It is illustrated and contains many tables and other technical data. The same company also is distributing to architects, a new Delineator which is a chart designed to make perspective sketching easier. Copies of the Delineator will be furnished without charge to gas companies that wish to supply architects direct.

Hawks Gas-Filter

The Hugo Manufacturing Co., Duluth, Minn., announces that it is marketing the Hawks Gas-Filter—a small compact filter used to remove all foreign matter in gas going to pilot lights on water heaters, gas heating plants and incinerators. It is used on gas refrigerators and water heaters of the low consumption type. It is made of special tubing with brass connections to fit the gas lines. The filtering element is a heavy filter paper so folded as to permit the passage of 60 feet of gas per hour.

Contributions by manufacturers of gas appliances and equipment to this department will be welcomed by The A. G. A. Monthly. On account of space limitations, all announcements of new products, improvements, etc., should be limited to about 100 words. No attempt will be made to describe each product or give details of construction. For such details address the manufacturer direct. Where justified, photographs will be used to illustrate these brief items. All contributions to this department should be addressed to C. W. Berghorn, Secretary, Manufacturer's Section, American Gas Association, 420 Lexington Ave., New York, N. Y.

In New Tank Shop

The Kompak Company, New Brunswick, N. J., has opened a new plant extension, and started the manufacture of copper tanks in a new tank shop. This is a new steel and concrete building, equipped with all new machinery with individual motor drive for each machine, and laid out to get the utmost possible production of copper tanks. This building is heated with gas by means of unit heaters.

Pressed-Steel Gas Furnace

A new pressed-steel gas-fired furnace is announced by the L. J. Mueller Furnace Company. It has been especially built in response to the great increase in the use of gas for heating, and the subsequent demand for a correctly designed, high-grade furnace, in harmony with modern standards as to appearance, and available at a popular price.

Fan-Filter Unit

The gas division of the American Foundry & Furnace Co., Bloomington, Ill., is producing a fan-filter unit for gas conversion burner jobs.

Bon-Air Heater

The Rudy Furnace Company, Dowagiac, Mich., has entered the gas-fired warm-air furnace field with their new Bon-Air Heater. This heater is built in units with multiples of 60,000 B.t.u. input on the basis of American Gas Association approved ratings. Complete automatic service is claimed for this unit. Not only does it offer the usual service of gas-fired equipment, but it automatically humidifies and automatically circulates the air in the home under positive pressure.

"Emcorector"

The Pittsburgh Equitable Meter Company, Pittsburgh, Pa., announces a device called the "Emcorector," which automatically records the volume of gas at the base pressure agreed upon between customer and seller. The reading adjusted to proper base pressure is registered direct on a counter, ready for billing. Inaccurate chart calculations, which always generate misunderstandings between buyer and seller, are completely eliminated. For further reference purposes a standard Emco chart can be attached and filed for permanent reference after the record is completed. This device can be adjusted to fit any high-pressure positive placement meter now on the market.

Gas Control Unit

Model 30 Reynolds Gas Control Regulator announced by the Reynolds Gas Regulator Company, Anderson, Indiana, is especially designed for bottled gas installations. This gas control unit is the result of extensive research, as to the specific requirements demanded for this type of work. Size, strength and accuracy were factors which received careful consideration of the Reynolds engineers. Two sizes (No. 0-No. 1), give uniformity and efficiency in gas regulation. No. 0 is recommended where the maximum volume of gas required does not exceed 150 cu.ft. per hour. No. 1 is for installations where the volume required is in excess of 150 cu.ft. per hour.

Hydraulic Scrubber Standpipe

The hydraulic scrubber standpipe system developed by The Parker-Russell Mining & Mfg. Co., St. Louis, Mo., is applied to gas benches, by-product or coke ovens or any other regenerative oven which produces gas or vapors that require sealing, cleaning and condensing before being admitted to a standpipe or standpipes, or pipes used to transmit gases or vapors to a central storage.

Servel Expands

Servel, Inc., manufacturers of gas-fired refrigerators at Evansville, Ind., has announced an expansion program for the coming year, which means the expenditure of about one-half million dollars. Additional refrigerator manufacturing

equipment will be added and there will be a general rearrangement of the Evansville plant.

Control System

The Shallcross Control Systems Company, Milwaukee, Wisconsin, has brought out a control system for maintaining a constant mixture of the combustion gases used in open hearth steel furnaces.

New Line of Furnaces

W. J. Kerr, general manager of the Ward Heater Company, has announced the development of four new floor furnaces by his company. These furnaces are larger than other types of Ward's. The new floor furnaces, together with two new sizes of circulators which have also just been put on the market, were designed by Walter M. Berry, consulting engineer associated with the Ward Heater Company.

"Modern Gas Heat"

"Modern Gas Heat," published by Follansbee Brothers Company, features new air conditioning heating systems with heaters designed exclusively for gas. The interesting feature of this catalog is that it contains technical information for the use of architects, engineers, and the building trade all of whom, at present, are none too familiar with gas heating. The catalog also contains heating plans, or layouts, of forced air heating systems and goes into detail regarding the construction of gas heaters. Another section of the catalog is devoted to information which will make the architect and heating engineer more familiar with gas engineering.

In Memoriam

The following members of the American Gas Association died during the past Association year:

J. K. Anderson, Charleston, W. Va.
Isaac M. Beatty, Ossining, N. Y.
J. P. Cappau, Tulsa, Okla.
Walter I. Cobble, Chicago, Ill.
Thos. R. Clayton, Providence, R. I.
H. P. Drains, Chicago, Ill.
H. M. Ernst, Oil City, Pa.
R. H. Hubbell, San Francisco, Calif.
T. J. Hutchings, Philadelphia, Pa.
I. N. Knapp, Philadelphia, Pa.
John Kruesi, Chattanooga, Tenn.
John Lambing, Crafton, Pa.
L. P. Lowe, Los Angeles, Calif.
J. F. Lumsden, Halifax, Nova Scotia.
Donald MacArthur, Glen Ridge, N. J.
Chas. H. Manchester, Providence, R. I.
Col. M. M. Milton, New York, N. Y.
Francis X. Murray, New York, N. Y.
O. E. Norvell, Refugio, Texas.
Jos. M. Regan, San Pedro, Calif.
Geo. N. Riley, Pittsburgh, Pa.
W. N. Ryerson, New York, N. Y.
J. G. Schonfarber, Providence, R. I.
Dr. A. C. Scott, Dallas, Texas.
R. M. Searle, Rochester, N. Y.
Jesse Sherwood, Brooklyn, N. Y.
Haller D. Seavey, Amherst, Mass.
S. I. Stern, Meadville, Pa.
C. S. Vance, Los Angeles, Calif.
J. Earl Whitehead, Philadelphia, Pa.
Robert W. Wyant, New Haven, Conn.
Jas. J. Cabot, Charleston, W. Va.
N. D. Van Blarcom, New York, N. Y.
L. G. Bub, Cleveland, Ohio
F. B. Barnard, Buffalo, N. Y.

Gas Course at Rutgers

(Continued from page 499)

ing his home in Cornwall, England, from an iron retort 70 feet distant from the house and, as early as 1804, building a plant sufficient to light a cotton mill in Manchester.

The text then goes into the preliminary details of chemical compounds and mechanical mixtures, takes up raw materials, combustion, steam and steam boilers, finishing the introductory subjects. Then come the essential principles of the manufacture of coal gas, including producer gas, blue gas and carbureted blue gas. Coal gas generating equipment is described and large and small carbonizing equipment. The closing section of part one is devoted to apparatus used for the manufacture of blue gas and carbureted blue gas.

Part two first describes fuels and gas handling. Station meters and gas holders come next for attention, followed by two sections devoted entirely to gas distribution. The section which follows takes up the customer's meter and the course closes with a brief but highly important treatment of the utilization of gas.

The text material contains numerous illustrations of standard equipment, cross-sections being shown in many cases with all parts labelled to make their construction and operation perfectly clear.

The course in the manufacture, distribution and utilization of gas will be valuable to practically any employee in any of these branches of the industry. Its especial value is in its making the man who may be perfectly familiar with the details of his own department or sub-division, better acquainted with the work of the other departments. It will enable him to cooperate with them and make himself more valuable on his own job. In many processes which are entirely familiar in their operation, the underlying theory of their operation is not always as familiar as it should be to the man who carries on the work. The man who wishes to get ahead must know the "why" as well as the "how" of his job and if he expects to progress very far should know the "how" and the "why" of as many other jobs as possible. That the course will certainly enable him to do this is the belief of all of those who have seen it and are in a position to judge of the requirements of the jobs involved.

Further information regarding the content of the course and details of the home study plan by which it will be administered may be obtained by addressing: University Extension Division, Rutgers University, New Brunswick, N. J.

A. G. A. Pins Available

Attention of members of the American Gas Association is invited to the fact that A. G. A. membership pins are available at $2 each. Designed in blue and gold, they are unusually attractive and durable. All orders should be addressed to the American Gas Association, 420 Lexington Avenue, New York, N. Y.

Monthly Summary of Gas Company Statistics

FOR MONTH OF AUGUST, 1930

Issued October, 1930, by the Statistical Department of the American Gas Association
420 Lexington Avenue, New York, N. Y.

PAUL RYAN, Statistician

COMPARATIVE STATISTICS OF 151 MANUFACTURED GAS COMPANIES FOR THE MONTH OF AUGUST, 1930

	Month of August			Eight Months Ending August 31		
	1930	1929	Per cent Increase	1930	1929	Per cent Increase
Customers	8,901,913	8,821,971	0.9	See August		
Gas Sales (MCF)	24,291,493	25,682,821	— 5.4	238,521,378	236,517,882	0.8
Revenue (Dollars)	26,846,636	27,816,992	— 3.5	253,539,678	251,690,575	0.7
Gas Produced and Purchased (MCF)						
Gas Produced						
(a) Water Gas	11,091,479	11,898,526	— 6.8	119,142,861	125,629,601	— 5.2
(b) Retort Coal Gas	2,358,523	2,546,972	— 7.4	20,172,510	21,041,347	— 4.1
(c) Oil Gas	475,077	449,054	5.8	5,164,979	5,281,654	— 2.2
(d) Coke Oven Gas	3,985,713	3,882,199	2.7	32,609,411	30,639,343	6.4
(e) Reformed Oil Still Gas	142,160	41,804	—	1,149,916	41,804	—
(f) Total Gas Produced	18,052,952	18,818,555	— 4.1	178,239,677	182,633,749	— 2.4
Gas Purchased						
(a) Coke Oven Gas	8,783,978	9,169,522	— 4.2	74,397,651	69,468,343	7.1
(b) Oil Still and Natural Gas	197,297	188,516	4.7	1,656,369	1,941,462	—14.7
(c) Total Gas Purchased	8,981,275	9,358,038	— 4.0	76,054,020	71,409,805	6.5
Total Gas Produced and Purchased	27,034,227	28,176,593	— 4.1	254,293,697	254,043,554	0.1

COMPARATIVE STATISTICS OF 119 NATURAL GAS COMPANIES FOR MONTH OF AUGUST

Customers						
Domestic (Including House Heating)	3,923,328	3,840,646	2.1			
Commercial	166,724	159,275	4.7			
Industrial	12,336	17,178	—28.2			
Main Line	3,309	2,507	32.0			
Miscellaneous	2,237	1,411	—	See August		
Total	4,107,934	4,021,017	2.2			
Gas Sales (MCF)						
Domestic (Including House Heating)	10,098,394	10,509,605	— 3.9	179,287,412	179,636,912	— 0.2
Commercial	1,363,042	1,461,362	— 6.7	20,711,873	20,240,348	2.3
Industrial	13,209,652	15,746,922	—16.1	110,390,203	117,504,126	— 6.1
Main Line	3,415,756	2,548,857	34.0	25,220,211	20,195,896	24.9
Miscellaneous	438,969	468,185	—	4,064,368	3,882,634	—
Total	28,525,813	30,734,931	— 7.2	339,674,067	341,459,916	— 0.5
Revenue (Dollars)						
Domestic (Including House Heating)	8,222,184	8,354,032	— 1.6	123,860,845	123,121,778	0.6
Commercial	817,418	892,699	— 8.4	11,566,691	11,307,687	2.3
Industrial	3,364,728	4,277,963	—21.3	30,175,157	33,553,571	—10.1
Main Line	525,852	321,541	60.4	3,998,274	2,746,380	45.6
Miscellaneous	83,990	96,702	—	957,121	1,042,683	—
Total	13,014,172	13,942,937	— 6.7	170,558,088	171,772,099	— 0.7
Gas Produced and Purchased (MCF)						
Natural Gas Produced	8,184,282	9,646,742	—15.2	107,301,621	112,396,330	— 4.5
Natural Gas Purchased	33,202,997	33,058,879	0.4	364,769,343	352,172,687	3.6
Natural Gas Produced and Purchased	41,387,279	42,705,621	— 3.1	472,070,964	464,569,017	1.6
Manufactured Gas Produced and Purchased	1,119,756	2,875,883	—61.1	16,170,099	29,440,765	—45.1
Total Gas Produced and Purchased	42,507,035	45,581,504	— 6.7	488,241,063	494,009,782	— 1.2
Company Use and Sales to other Gas Companies	11,192,212	12,035,717	— 7.0	130,646,831	133,980,675	— 2.5
Net Available for Public Distribution	31,314,823	33,545,787	— 6.6	357,594,232	360,029,107	— 0.7

Gas Utility Sales Slower In First Eight Months

A SMALL increase in manufactured gas sales and a slight decrease in natural gas sales is indicated by the comparative operating reports of manufactured and natural gas utilities for the first eight months of 1930.

However, in considering these comparative data on gas utilities for the eight-month period, it must be borne in mind that these months witnessed a recession in general industrial and economic activity fully as severe as any ever experienced by the trade and industry of this country. During this eight-month period the production of bituminous coal declined more than 12 per cent from the corresponding interval of 1929, the output of crude petroleum dropped 8 per cent, pig iron production was down 20 per cent and steel ingot production 23 per cent. During this same period the number of freight cars loaded dropped 11 per cent while the production of automobiles declined by more than 36 per cent.

Despite these adverse influences, however, reports from a group of natural gas companies representing more than 80 per cent of the public utility distribution of natural gas indicate sales of nearly 340 billion cu.ft. for the first eight months of 1930, a decline of only one half of one per cent from the corresponding period of 1929. The revenues of these companies for the same period aggregated about 171 million dollars, compared with 172 million a year ago.

In response to the generally depressed condition of trade and business, natural gas sales for industrial purposes declined by more than 10 per cent, but this was practically offset by the industry's program of expansion into new territory where gas service was not previously available. Where final figures covering the entire production and consumption of natural gas during the eight-month period are not available, provisional estimates indicate that production aggregated more than one trillion, two hundred and seventy-two billion cubic feet, an increase of 3.4 per cent over the same interval of 1929. The consumption of natural gas for the generation of electric power during the first eight months of 1930 continued at a rate about 17 per cent above the preceding year, despite the fact that during the same period the production of electric power increased by only four tenths of one per cent.

Because of the relatively smaller proportion of industrial business, manufactured gas sales were not affected to the same extent by the general decline in economic and business activity. Reports from companies representing over 90 per cent of the manufactured gas industry indicate sales for the first eight months of 1930 of 239,000,000,000 cu.ft., an increase of somewhat less than one per cent over the corresponding period of 1929.

The declining trend in water gas production continued during the current year, production for the eight-month period averaging more than five per cent under the levels of the previous year. The quantities of coke oven gas produced and purchased however increased seven per cent.

GROUP A—NEW ENGLAND STATES

(Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont.)

(Data reported by 35 companies whose sales constitute 83% of the total sales of manufactured gas in the New England States.)

	Month of August			*Eight Months Ending August 31*		
Customers	*1930*	*1929*	*Per cent Increase*	*1930*	*1929*	*Per cent Increase*
Domestic	1,032,625	1,031,013	0.2			
House Heating	5,443	4,200	29.6			
Industrial and Commercial	35,704	36,126	— 1.2	*See August*		
Miscellaneous	417	288	—			
Total (34 companies which segregate)	1,074,189	1,071,627	0.2			
Grand Total (35 companies)	1,108,021	1,105,442	0.2			
Gas Sales (MCF)						
Domestic	2,088,786	2,052,918	1.7	17,241,331	16,633,759	3.7
House Heating	12,965	8,515	52.3	2,048,925	1,483,483	38.1
Industrial and Commercial	445,343	525,127	—15.2	4,145,066	4,556,748	— 9.0
Miscellaneous	17,513	18,395	—	189,906	191,199	—
Total (34 companies which segregate)	2,564,607	2,604,955	— 1.5	23,625,228	22,865,189	3.3
Grand Total (35 companies)	2,637,517	2,680,627	— 1.6	24,324,207	23,535,659	3.3
Revenue (Dollars)						
Domestic	2,785,086	2,717,688	2.5	22,502,343	21,728,932	3.6
House Heating	14,728	7,969	84.8	1,672,642	1,195,278	39.9
Industrial and Commercial	434,125	521,349	—16.7	3,951,130	4,590,927	—13.9
Miscellaneous	13,528	17,164	—	131,525	158,961	—
Total (34 companies which segregate)	3,247,467	3,264,170	— 0.5	28,257,640	27,674,098	2.1
Grand Total (35 companies)	3,334,751	3,353,538	— 0.6	29,040,992	28,435,565	2.1
Gas Produced and Purchased (MCF)						
Gas Produced						
(a) Water Gas	1,107,968	1,194,628	— 7.3	11,336,291	10,940,691	3.6
(b) Retort Coal Gas	681,687	677,093	0.7	5,494,163	5,562,885	— 1.2
(c) Oil Gas	540	——	—	978	——	—
(d) Coke Oven Gas	308,282	306,372	0.6	2,772,092	2,400,896	15.5
(e) Total Gas Produced	2,098,477	2,178,093	— 3.7	19,603,524	18,904,472	3.7
Coke Oven Gas Purchased	1,045,893	882,753	18.5	7,216,290	6,760,538	6.7
Total Gas Produced and Purchased	3,144,370	3,060,846	2.7	26,819,814	25,665,010	4.5

NOTE: Of the thirty-five companies reporting, thirty-four segregate customers, sales and revenue monthly, and one company reports only totals. The data shown above for domestic, house heating, industrial-commercial classifications are based only on the reports of the thirty-four companies which segregate returns.

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Thirteenth Annual Convention of the American Gas Association
Atlantic City, N. J. - - - October 12-16, 1931

Employment Bureau

SERVICES REQUIRED

Experienced industrial gas **salesmen** for large operating gas company. **0163.**

Sales engineers to handle line of motor operated valves, low temperature pressure and combustion safety controllers. Men 25 to 35 years with college training preferred. Familiarity with process control field advantageous. **0167.**

One, two or three **salesmen** familiar with house heating; would like to interview those who have held similar positions with gas companies. Salary according to experience and ability. **0171.**

Experienced gas appliance **salesmen** wanted by Holding Company for service in small gas plants. Only men who can sell and are ambitious are desired. Salary and commission. Write full qualification. **0172.**

Experienced house-heating **sales engineer.** State age and qualifications. Location: Kentucky and Tennessee. New natural gas territory. State salary and commission desired. **0175.**

Experienced gas appliance **salesman.** State age and qualifications. Location: Kentucky and Tennessee. New natural gas territory. State salary and commission desired. **0176.**

Manager for small gas property in the Southeast owned by holding company. State experience, references, and salary desired. **0177.**

High grade man with adequate education and experience to take charge of relatively large property; position is chiefly **managerial** but requires good engineering background. **0178.**

Rate engineer for company in middle West; knowledge of rate making and rate structure necessary and engineering and accounting experience desirable. Salary about $4,000. **0179.**

Practical experienced industrial gas equipment **salesman** for established line of burners, and special equipment. Headquarters, New York City. Write fully as to experience, etc. **0180.**

General Manager or Operating Vice-President for well-established Natural Gas Company wholesaling its product in Appalachian field. Must have had actual experience, have good personality, be capable executive, good trader with experience in the selection and development of acreage, active, energetic, loyal, reliable, with unblemished record for integrity. Address, giving full record of business, personal history and salary requirements with references. Replies will be regarded as confidential. **0182.**

Experienced, honest-to-goodness, hard-hitting gas range **salesmen** for Metropolitan New York, New Jersey and the New England Territory. **0183.**

Three **technical graduates,** between 28 and 40, with experience in modern gas plant practice and accustomed to handling men. Southern location. Salary up to $300 per month. **0184.**

District Manager (30 to 35) for gas company serving between 7,000 and 8,000 meters. Should be thoroughly experienced in new business and public relations activities; technical training and familiarity with production, distribution and utilization desirable. **0185.**

Experienced **industrial** and **house-heating salesmen** at once for Southern location in natural gas territory; salary and commission basis. **0187.**

Large utility in the South wants Industrial **gas salesman** with experience in power and large heating boiler applications. **0188.**

Working superintendent experienced in production and distribution of coal gas; give age, references, salary wanted and when available. **0189.**

SERVICES OFFERED

General manager of three gas companies, 5,500 meters. Twenty-five years experience in the gas business, of an unusually diversified nature and thoroughly capable of taking charge of a large gas utility both from an executive and engineering standpoint. **359.**

Young Engineer, now employed in gas manufacturing, would like to get into Industrial Gas Field. Recent graduate. **360.**

Gas engineer with seven years supervisory experience in distribution, construction and design would like position as distribution superintendent or assistant. Available immediately. **361.**

I WANT A MAN!

This call for service comes to A. G. A. Headquarters by letter, by telegram, by local and long distance telephone and very frequently through personal visits made by executives who have travelled long distances.

The Confidential Classification Records filed with the Employment Bureau are consulted and suitable arrangements are made to put the prospective employer and available executives, engineers, operators and salesmen in touch with one another. This procedure is followed whether or not the applicant has placed an advertisement in these columns.

The placement of an advertisement is a privilege of membership and no charge is made; closing date for copy is the seventh of the month to insure insertion in the next issue.

Consider the effect of a well phrased and neatly typewritten record upon a busy, out-of-town executive, seeking his man from a stack of impersonal, silent but very eloquent records of qualifications, both personal and technical!

Superintendent, Assistant, or General Foreman of medium size plant or Master Mechanic of large plant. Twenty-five years experience in coal and water gas manufacture as master mechanic and superintendent. Now employed. Services will be available in one month. **362.**

Executive of proven ability with several million dollar corporations desires position of general manager. Can give satisfactory references regarding character and ability. **363.**

Engineer with technical and practical experience in all branches of gas manufacture desires position. No objection to foreign location. **364.**

Comptroller—with complete knowledge of public utility accounting procedure, seeks connection as Comptroller, Treasurer, or Office Manager. Seven years' experience as Comptroller and Assistant Treasurer, supervising Accounting Department. Wide experience in finance, consolidation, and General and Commercial Accounting. **365.**

Gas engineer—technical man, experienced in routine operation of coal and water gas plants, expert in operation, distribution, plant design and constructon and familiar with recent methods of production, desires position with operating or engineering company. **366.**

Home Service Director, familiar with every phase of Home Service work; technical knowledge of natural, manufactured and butane gas, as well as all household gas and electrical appliances, desires change of position. Free to travel or settle in any part of the United States. **367.**

Technically trained gas engineer, thoroughly familiar with construction and operation of coal gas production and auxiliary equipment. Fourteen years unusually broad experience in supervision of design and construction; has secured marked reduction in costs. **368.**

Assistant to Operating Engineer or General Manager; experience in construction, manufacture and distribution; aggressive and ambitious; obtains results. **369.**

Manager or superintendent with twenty-three years' experience in all branches of manufactured gas industry seeks position in production, construction or distribution. Has managed several small properties. **370.**

Position as District Manager of a medium size property. Technical graduate, nine years' experience in all branches of gas industry. At present employed as Manager. **371.**

Executive with twenty years' experience in all phases of the gas and electric industry seeking a connection where his managerial ability can be employed. Has held important and responsible positions. Good organizer with a record as an economical operator. Particularly successful in improving customer relations. **372.**

Natural gas company executive (42) having had twenty-five years' experience in all branches of the industry. At present employed with large gas utility. **373.**

Manager of gas company or industrial fuel sales-mechanical-engineer. Experience covers successful national connection, plant design, construction, operation, business administration, fuel sales and engineering, in the gas industry nationally. Thoroughly capable of taking charge of a responsible situation from both an executive and engineering standpoint, particularly with a large holding company. **374.**

Engineer (33) with fourteen years' experience in gas property appraisals and inventories, rate work, new business and extension projects, statistical and cost work, together with general civil engineering in connection with natural gas property operations. Favorably employed at present, as a department head, but desires a change of location preferably to Ohio or the Middle West. **375.**

Industrial gas sales engineer, college graduate, experienced in marketing natural gas to refineries, glass companies, paint companies, ceramic, power and ice plants, salt companies and heat treating plants. Familiar with design and construction of metering, regulating and burning equipment for industrial application. **376.**

Manager-Superintendent. Twelve years' experience as superintendent of water gas production and general manager; experienced in safety supervision and public relations work; desires position requiring some or all of above experience; age 35, married; technical graduate; prefer southern location; will consider foreign assignment. **377.**

Executive with public utility experience qualified to specialize on rate analysis, electric or gas, desires engagement. **378.**

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